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Q. S.

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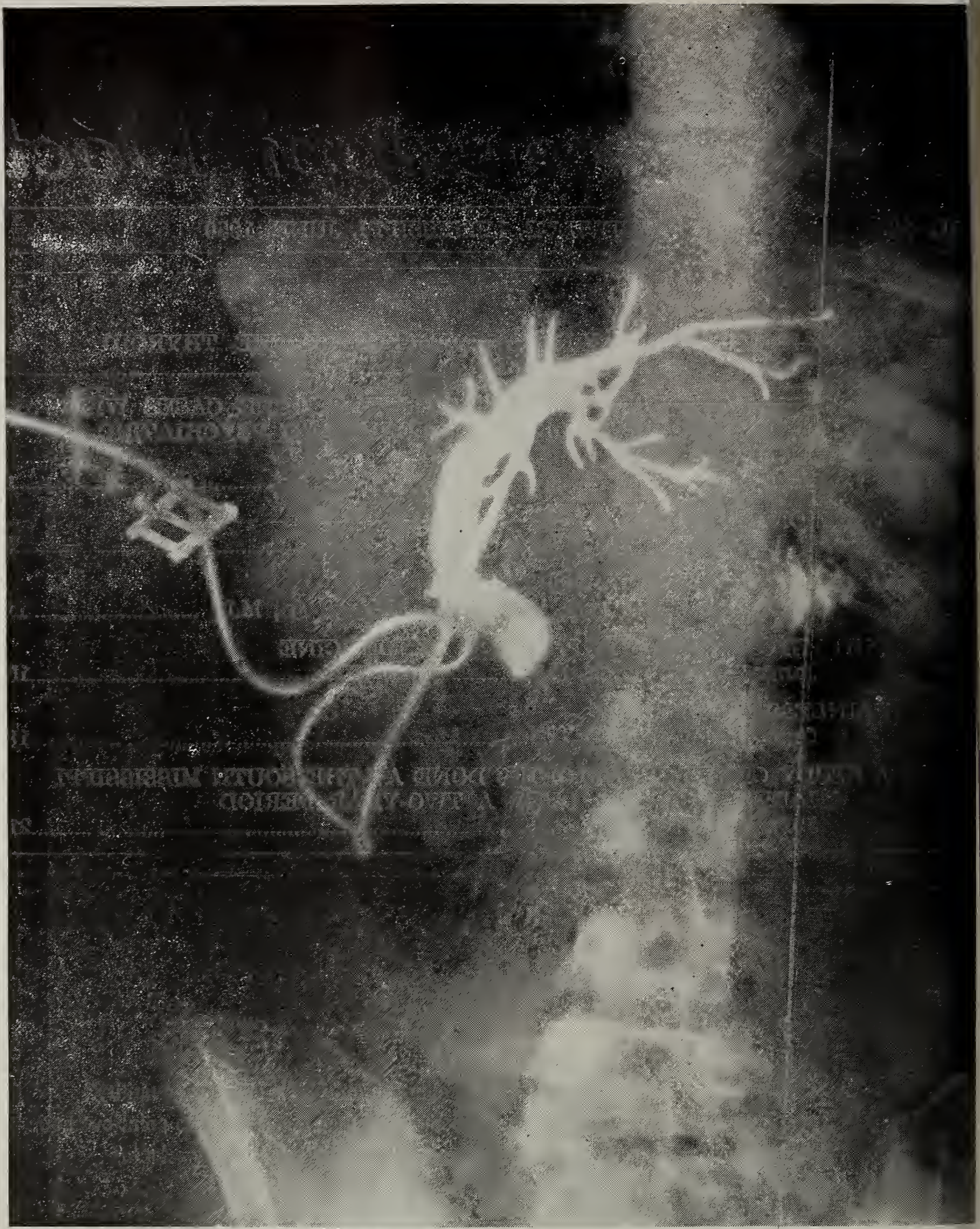

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Q. V.

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S. A.

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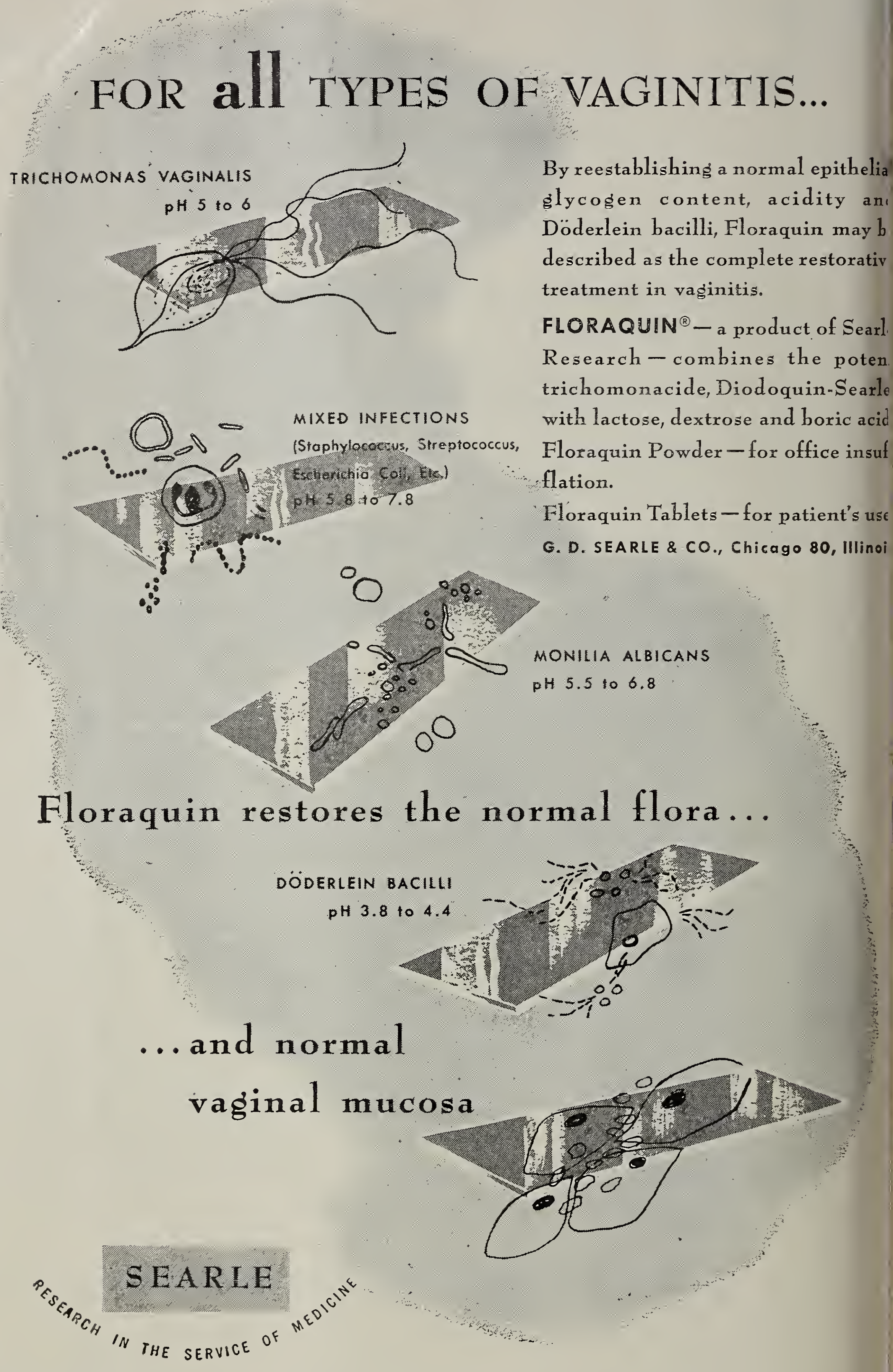
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Gay, L. N.; Landau, S. W.; Carliner, P. E.; Davidson, N. S.; Furstenberg, F. F.; Herman, N. B.; Nelson, W. H.; Parsons, J. W., and Winkenwerder, W. W.: Comparative Study of Antihistamine Substances: III. Clinical Observations, Bull. Johns Hopkins Hospital *83*:356 (Oct.) 1948.

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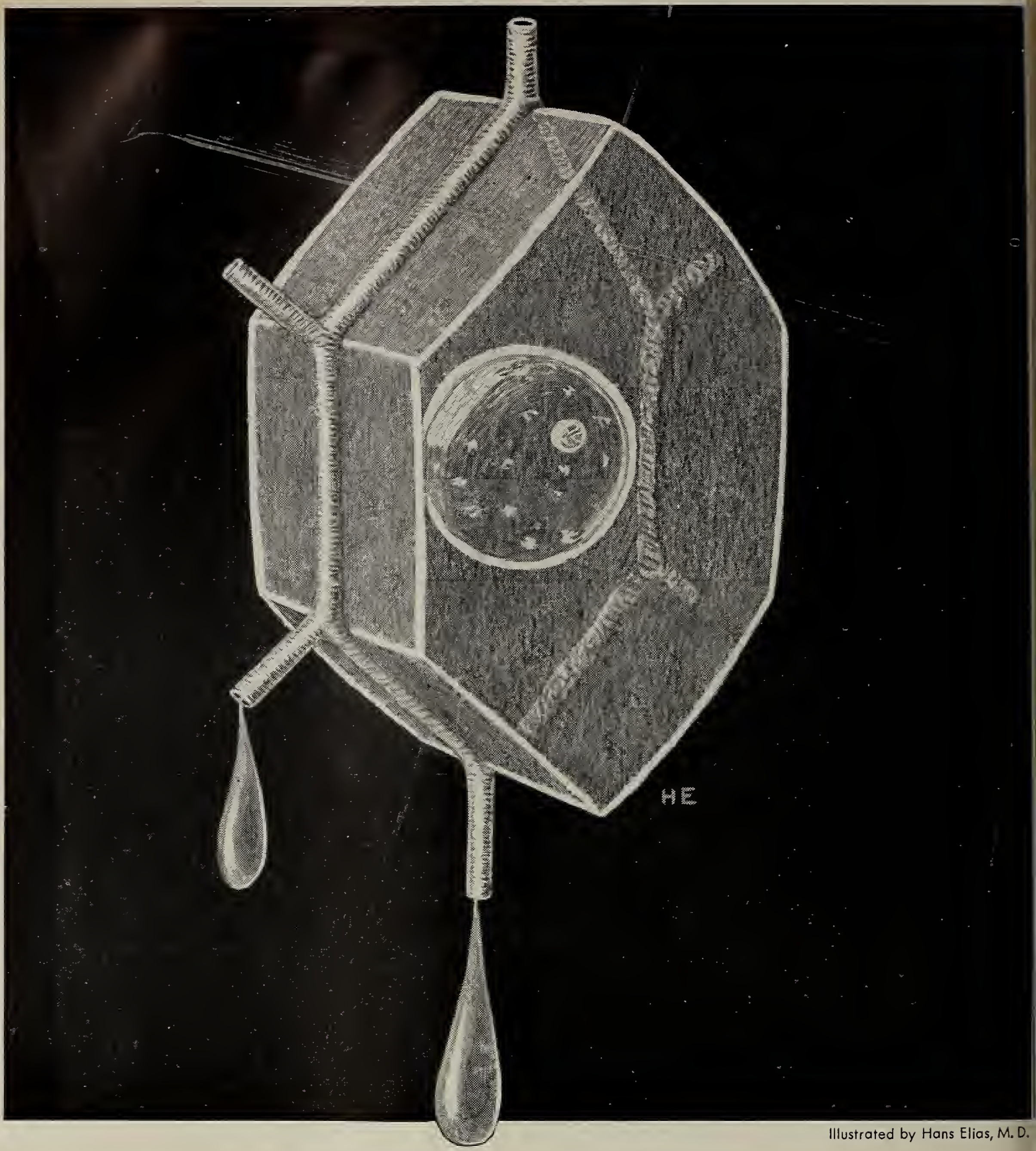

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REMEMBER THIS TERM?

Accuratis.

Undoubtedly you would if you had practiced in 1876, when tintypes, buffalo robes, and elaborate mixtures of prescription ingredients were in vogue—and Eli Lilly and Company had just begun. Since then, the request to compound a prescription *accuratissime,* meaning *most carefully,* has become unnecessary. Today, progress has made pharmaceutical accuracy certain. So you don't whip out a quill pen and write *accuratis.*—when you specify Lilly,

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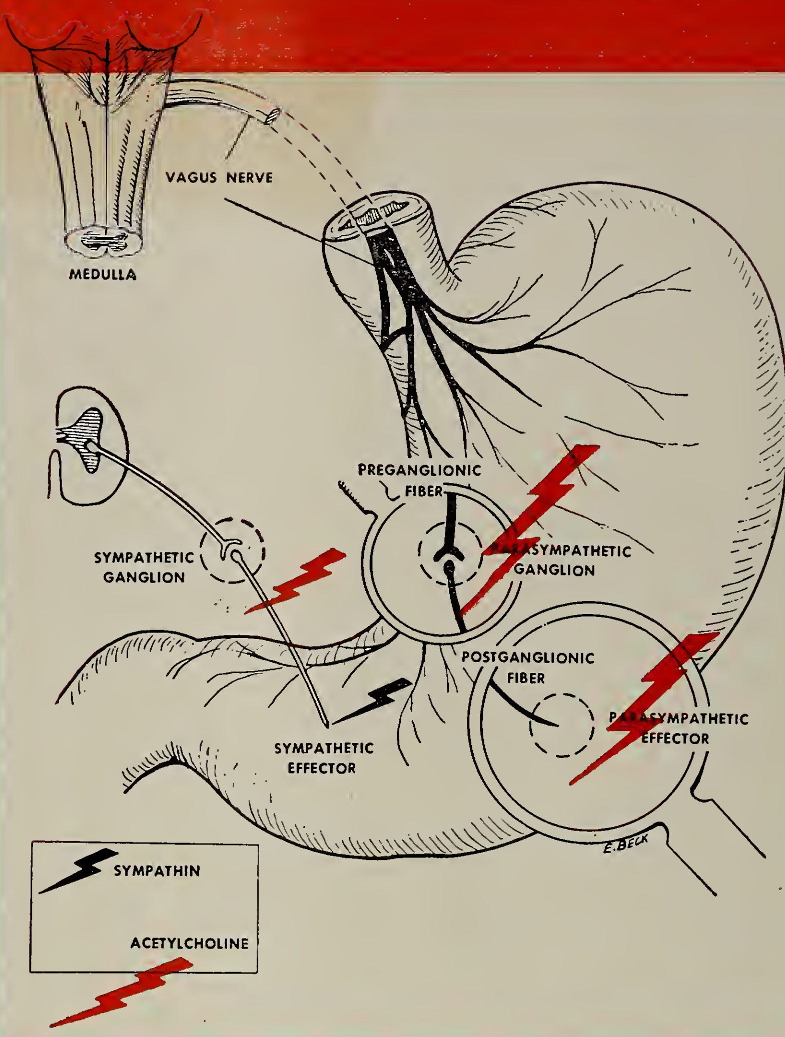
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were used for everything from scrofula to rheumatism—
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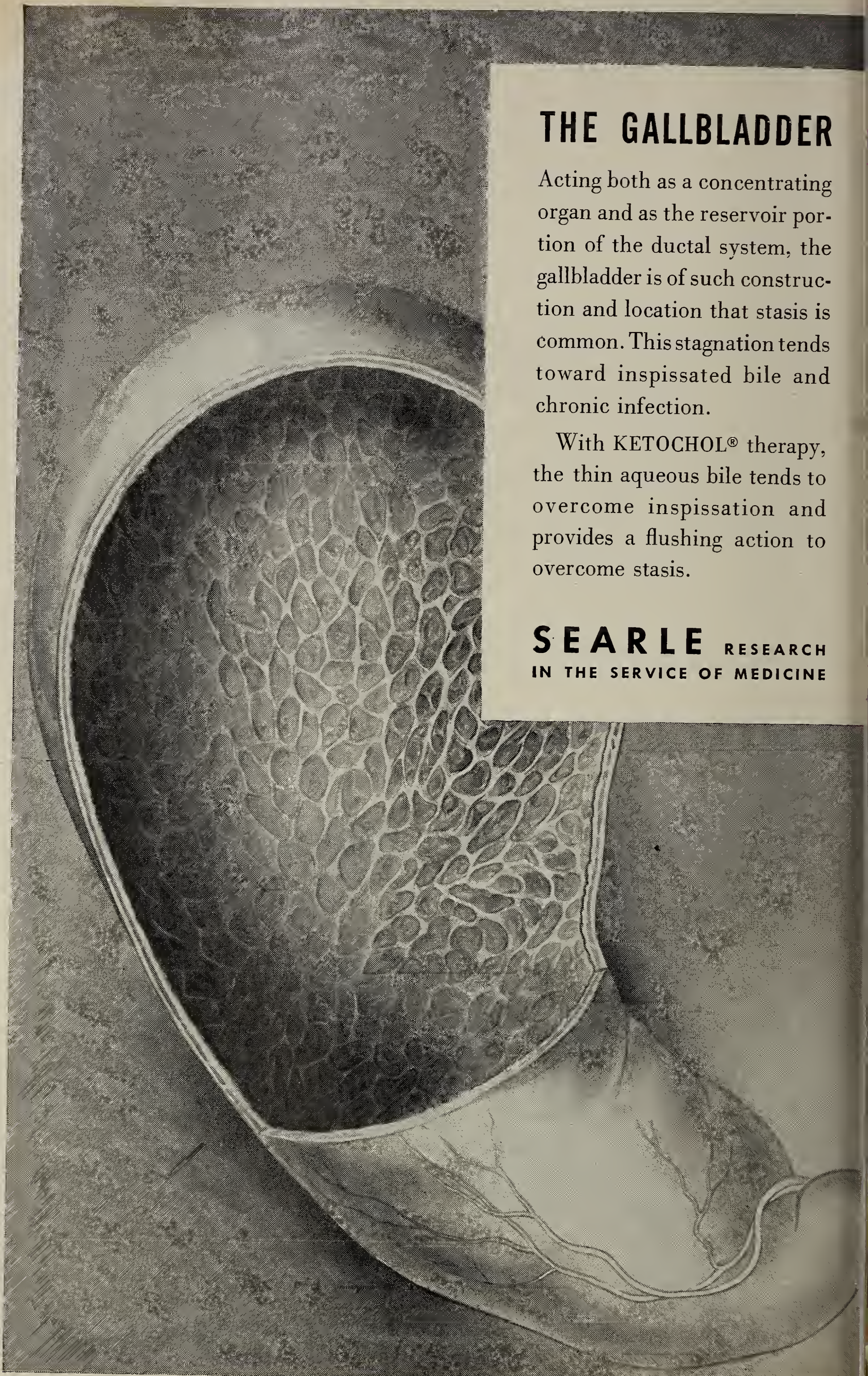

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MISSISSIPPI STATE MEDICAL ASSOCIATION MAY 15 - 17, 1951

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Undoubtedly you would
if you had practiced medicine in 1876, when homespun garments
and tin tubs were giving way to "store clothes,"
early modern plumbing, and health spas—
and Eli Lilly and Company had just been founded.

Since then, the prescription for
Balneum maris, meaning *sea-water bath,* has nearly vanished.
Today, you don't whip out a quill pen, write *Bal. mar.,*
and send your patient packing to a distant spa or shore—
for healing waters. Instead, you simply say,
"Take a vacation"; or if medication is indicated,
you may specify a Lilly product and thereby bring
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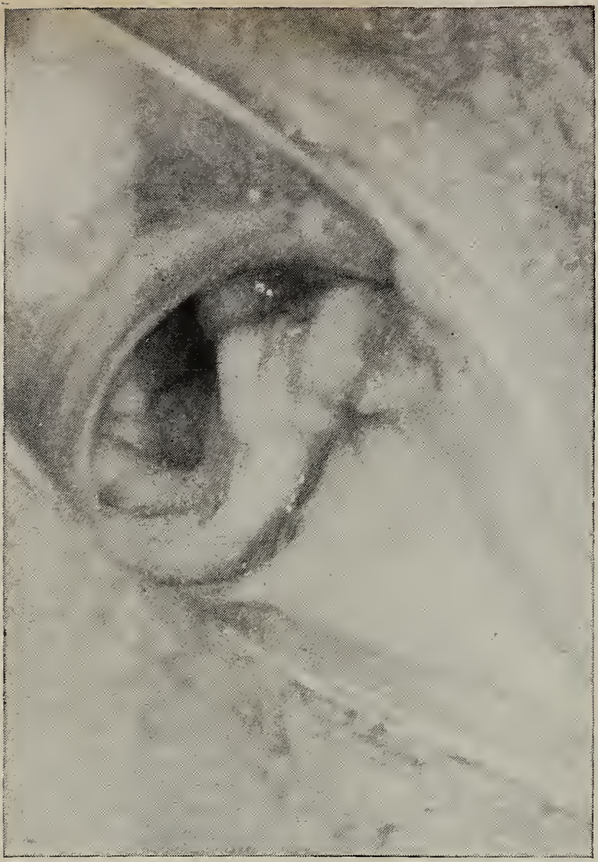
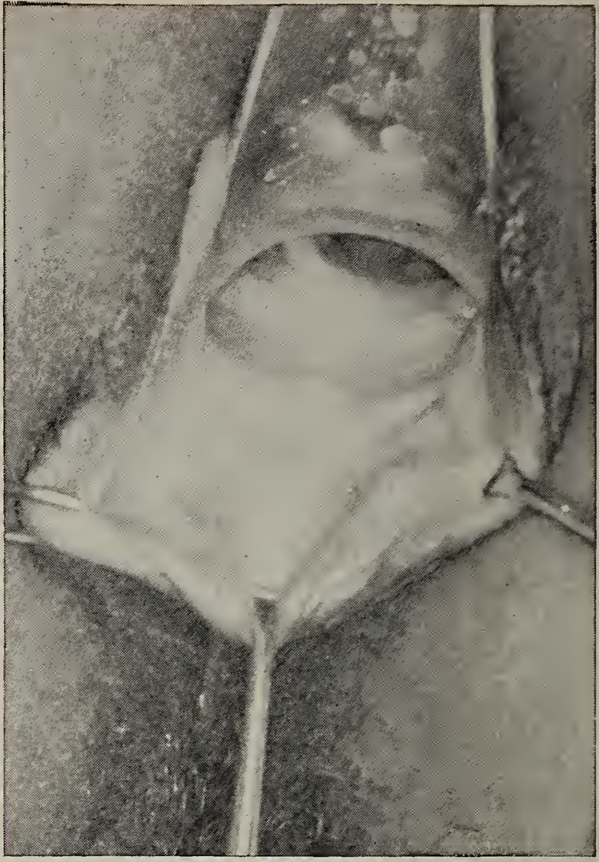


a. Ulcerative amebiasis during Diodoquin therapy. In this patient with severe hemorrhage, edema and necrosis, the ulcers show healing, with many scars. No active lesions are seen.



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b. Three months later, after continuing Diodoquin therapy, extensive scarring indicates healing. Inflammation is further reduced and only superficial areas of inflammation remain.

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1. Johnson, S. K.: Mississippi Doctor 27:69 (July) 1949.
2. Merritt, W.: J. Florida M. A. 35:351 (Dec.) 1948.

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No doubt you would
if you had practiced medicine in 1876,
when the sod huts of Western settlers were quite a contrast to the mansions
of Eastern industrialists—and Eli Lilly and Company had just begun.
Likewise, extreme differences between
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may have made it desirable to use the prescription instruction *c.f.*,
meaning to *compare* the appearance of a prescription
with one which had been filled previously.
Progress in the standardization of pharmaceuticals has assured uniformity
in all important qualities, so that you no longer need to write *c.f.*
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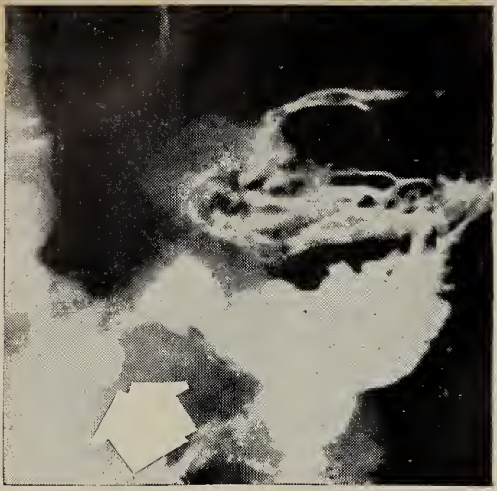

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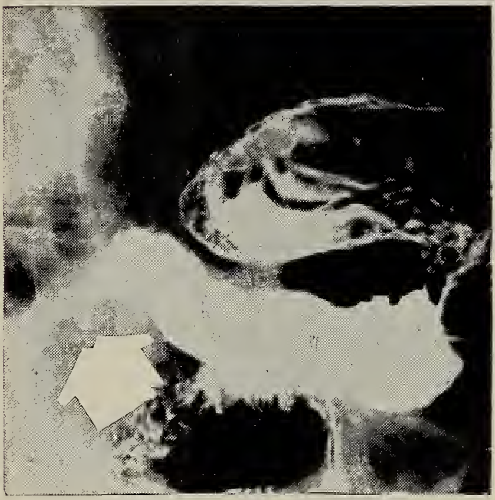

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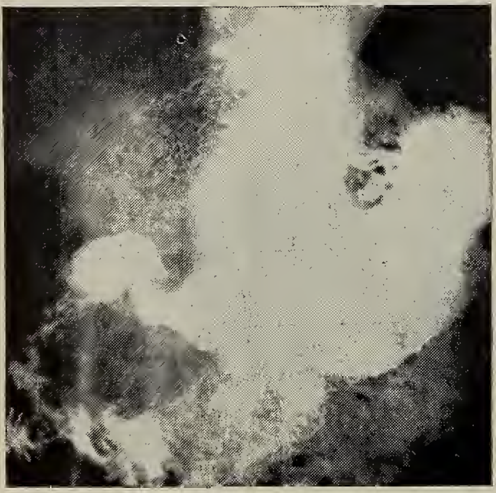

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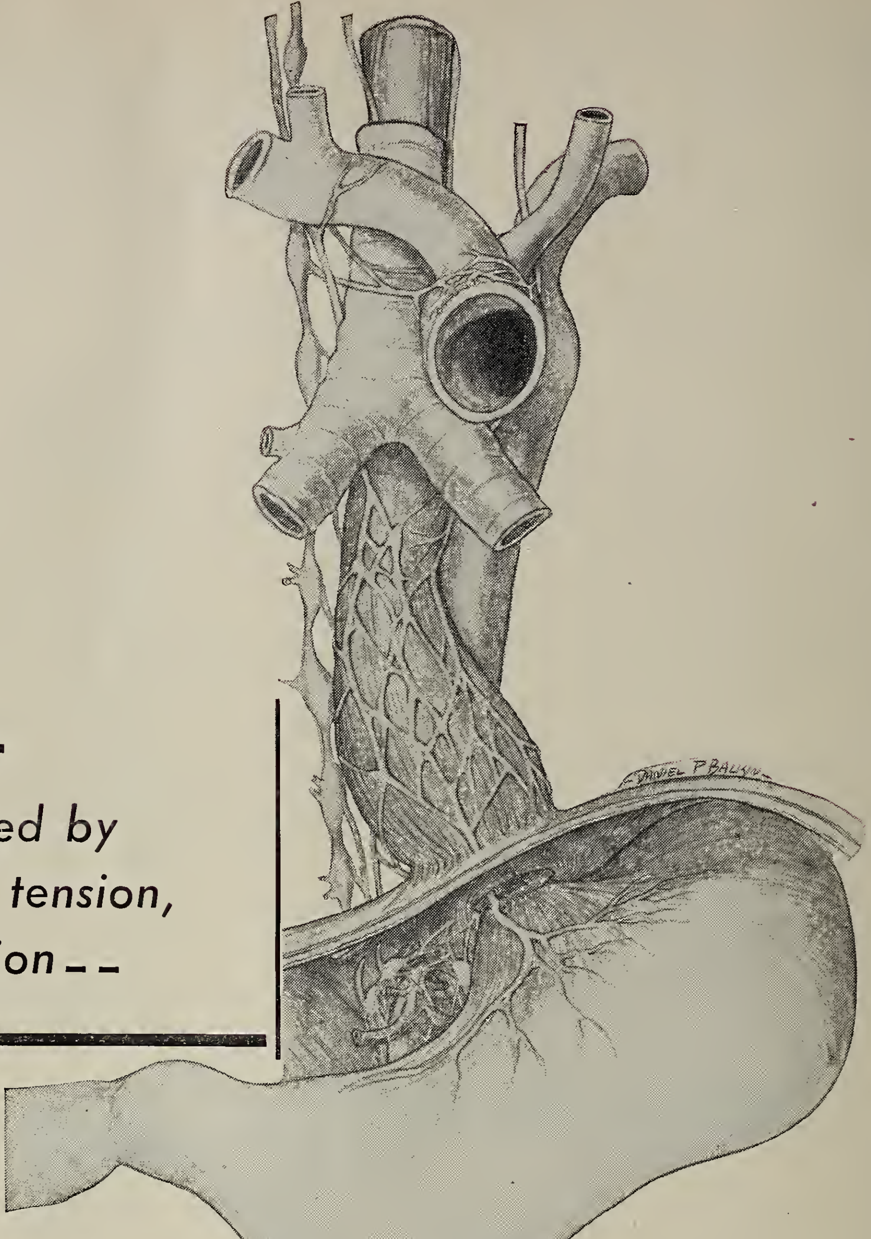

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Ocular Manifestations in Diseases of the Thyroid*

JOHN H. DUNNINGTON, M.D.†
New York, New York

The ocular changes that accompany disorders of the thyroid gland are so numerous that they are of interest to most physicians. The classical ocular signs of thyrotoxicosis are familiar to all and knowledge of their significance is of utmost importance. Less well appreciated are some other ocular conditions produced or materially affected by thyroid dysfunction. It is the purpose of this presentation to review the subject and to call attention to the ocular manifestations of the various types of thyroid diseases.

Hypothyroidism

The gradual thickening of the skin of the eyelids that accompanies or precedes that of the face and hands was noted in the earliest writings on myxedema. Its prompt disappearance with the use of thyroid extract is so generally appreciated that it is only necessary to mention that puffiness of eyelids is one of the initial signs of hypothyroidism. In contrast to this well established finding there are other ocular disturbances where the causal relationship is not proved but the correction of a lowered basal metabolism is one important part of the treatment.

Convergence insufficiency which produces an inability to use the eyes at close work is a common finding. The usual treatments such as correction of the refractive error and orthoptic exercises often fail to bring relief. It is my experience as well as that of others that many cases of persistent asthenopia with or without impairment of the convergence accommodation mechanism do have subnormal thyroid function and that a prompt disappearance of the symptoms occurs with the correction of this abnormality. In indolent corneal ulcers a striking improvement in the rate of healing occurs when thyroid extract is used to normalize a co-existing lowered basal metabolic rate. In optic nerve lesions the beneficial effects of vitamin therapy are sometimes enhanced by the administration of thyroid extract. In general it can be said that in any obscure or chronic ocular condition the function of the thyroid gland should be investigated and if found to be subnormal corrective measures used.

Hyperthyroidism

The ocular manifestations of an overactive thyroid have been known for over a hundred years. Parry[1] in 1825 gave a description of protrusion of the eyeballs in a case of hyperthyroidism that he had first seen in 1786. However not until von Basedow's[2] classical report in 1840 was there appreciation of the significance of this finding. Along about this time descriptions of the various ocular signs began to appear until gradually the whole clinical picture emerged in its present classical form. Every clinician is familiar with these signs: (1) Dalyrimple's sign of widening of the palpebral fissures due to the retraction of the upper and lower lids, (2) von Graefe's lid lag due to failure of the lid to follow the movement of the eyeball downward, (3) von Stellwag's infrequent winking, (4) Moebiuj's weakness of convergence, (5) Gifford's difficulty in eversion of the upper lid. It is true that these and other less well known signs belong to the syndrome of exophthalmic goiter and are a necessary part of it but in view of present knowledge their significance has become modified. Some signs that formerly were considered of great importance today are known to be of little value, while others barely mentioned in the earlier writings now have assumed diagnostic and therapeutic importance. A review of the present day conception of the importance of the ocular findings in disorders of the thyroid, therefore, is not amiss.

Ocular Findings

As pointed out by Sloan[3], the ocular signs may be grouped into those of spastic origin and those due to infiltrative changes.

Into the group of spastic changes belong the classical lid signs. The best example of which is the widening of the palpebral fissure. This occurs very early in the majority of cases of diffuse toxic goiter and it produces not only the exposure of the sclera above and below the corneal margins, which in turn gives rise to the staring gaze, but also it is responsible for the difficulty in eversion of the upper eyelid, the failure of the forehead to wrinkle in upward gaze and apparent exophthalmos. It is due to spasm of the smooth muscles of the lids, one of which is known as Mueller's muscle and the other as Landstrom's muscle. Mueller's superior palpebral muscle effects a pull between tarsus and the point of insertion of the superior rectus thus producing both retraction of the upper lid and a tendency to proptosis. The inferior palpebral muscle of Mueller extends from the fascial expansion of the inferior rectus to the lower lid. A spasm of it pulls the lower lid downward. The ill defined smooth muscle of Landstrom is made up of a number of fibers which surround the front part of the globe. They extend from the back of the orbital septum to the region of the equator of the eyeball where they become connected with the fascial expansions of the ocular muscles near their point of attachment to the eye. These two muscles (Mueller's and Landstrom's) exert a steady forward pull on the globe and according to some authorities, e.g. Adler[4], are capable of producing exophthalmos, particularly when there is a coexisting loss of tone of the extraocular muscles.

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The lid lag of von Graefe or failure of the upper lid to follow the globe in downward gaze is also produced by spasm of these smooth muscles of the lids. Marine and Rosen[5] think that such a spasm is the result of circulating adrenalin which acts more readily on unstriped muscle when there is an excess of thyroxin present in the blood. Furthermore, it is known that thyroxin has a myasthenic effect on striped muscle so as pointed out by Adler and his co-workers it is probable that the lid lag is the result of a combination of spasm of the smooth muscles and a weakening of the antagonistic striped muscle. Infrequent blinking is another phenomenon which results from spasm of the smooth muscles of the lids.

If only spasm exists the exophthalmos is apparent rather than real. This appearance is produced by the widening of the palpebral fissure. In such cases the change is usually bilateral and symmetrical and often improves with control of the thyrotoxicosis. Differentiation between real and apparent exophthalmos is not always easy because of the wide range in the degree of prominence of the eyes in normal people. Soley[6] has found that in normal individuals the exophthalmometer readings vary from 12 to 21 mm. with an average of 16 mm., while in group of patients with diffuse toxic goiter the measurements varied from 12 to 24 mm. with a mean of 18 mm. In this same study it was shown however that the number of cases with a reading of 19 mm. or over was 32% in the thyrotoxic cases and only 5% in the normal subjects. These findings indicate that a change in the prominence of the eyes often occurs in pure thyrotoxicosis but that it is slight and of no real significance. Furthermore, it can be stated that when the proptosis does become severe other factors are present and that they are largely responsible for its presence. In addition it is important to note that edema of the lids and conjunctiva are absent in pure thyrotoxicosis. Ocular muscle paralyses also seldom occur and when they do take place are usually transient. Along with these ocular signs is the clinical picture of thyrotoxicosis viz: tachycardia, loss of weight, tremor, excessive perspiration, voracious appetite and elevated basal metabolic rate. This classical picture is familiar to all and it is reiterated here only to contrast these findings with those encountered in the thyrotropic exophthalmos.

In this group the ocular changes are not due to spasm but to infiltration of the ocular muscles and other orbital structures. The pathogenesis of the ocular changes results from a deposition of fat and a change in water balance of the tissues of the orbit. Such changes are produced by a disturbance of the tie up between the thyroid and pituitary. Experimental evidence of an alteration in the normal balance has been produced by many workers.

Marine and Rosen first pointed out that there is a delicate balance between the various endocrine glands. A physiologic balance is maintained between the secretion of the so-called thyrotropic hormone of the anterior pituitary and the thyroxin need of the body. They furthermore showed that a disturbance of this balance could result in an overactivity of the anterior lobe of the pituitary body with a resultant hyperplasia of the thyroid produced by the oversecretion of the thyrotropic hormone. Such an imbalance causes exophthalmos in laboratory animals.

Smelser[7] was able to produce a genuine proptosis in guinea pigs previously thyroidectomized by the administration of extract of the anterior lobe of the ox pituitary. He furthermore showed that if the thyroidectomized guinea pigs are subjected to unilateral removal of the cervical sympathetic ganglia and then injected with extract of the anterior lobe of the pituitary body, proptosis develops to an equal extent on both sides. From these studies he concluded there is great similarity between experimental exophthalmos produced by injections of anterior pituitary extract and the clinical exophthalmos of primary toxic goiter. He found that the actual cause was enlargement of the orbital contents due to interstitial edema, an increase in the adipose tissue and in the volume of muscles associated with cellular infiltration. Estimation of the constituents of the orbital contents in these guinea pigs showed the increase to be 100 per cent in the fat, 40 per cent in the dorsal lacrimal gland and 22 per cent in the extrinsic muscles. Water content of all these tissues was much increased. The orbital fat showed no increase in lipid content, but the 100 per cent increase was found to be due to a connective tissue hyperplasia and edema. Muscle increase resulted from round cell infiltration and edema. Increase in bulk of fat also occurred in other body fats originally rich in connective tissue, but not in those fats with spare connective tissue content.

If only the thyrotropic element is present there is no retraction of the lid, no genuine lid lag and the widened palpebral fissure is largely the result of the protrusion of the globe. The lids and conjunctiva are edematous. The bulbar conjunctiva becomes elevated by the edema and the fluid gravitates into the lower cul de sac causing at times an actual prolapse of the conjunctiva. The lids are boggy and thickened by a similar accumulation of fluid. In extreme cases the weight of the upper lid is so great that a slight ptosis is produced. Accompanying and sometimes preceding these obvious signs of edema there is an annoying watering of the eye. It occurs early in the disease with sufficient regularity to warrant special mention, because its presence is often the forerunner of the other more obvious signs of water logging of the other orbital structures. The ocular muscles are similarly involved so diplopia is another symptom which makes its appearance early in the disease. In this type the diplopia is persistent and often progressive with gross involvement of one or more of the ocular muscles. The presence of either increased tearing or double vision should make the physician acutely conscious of the possibility of a disturbance of the thyrotropic mechanism.

The exophthalmos that occurs in the infiltrative type is genuine, progressive and often asymmetrical. The globe is pushed forward and the proptosis is resistant to pressure. On palpation one gets the impression that the eyeball is more or less fixed and in some instances the enlarged ocular muscles may be felt. (Sloan) The protrusion may reach such an extreme degree that the swollen and edematous lids can no longer cover the cornea. Ulceration from exposure and disturbance of the nutrition of the cornea may result in complete loss of vision. While the exophthalmos that occurs in the thyrotoxic group may be asymmetrical usually it is equal on the two sides. In this second group asymmetry is the rule and at times the lack of involvement of one eye is so striking that the unilateral protrusion is thought to be due to an orbital neoplasm. It is possible that some of the so-called pseudo-tumors of the orbit are but a typical manifestation of thyrotropic exophthalmos. It is unfortunate that these two groups do not remain as distinct clinical entities. Pure thyrotoxic cases and pure thyrotropic cases do exist but the usual rule is for the two conditions to overlap. A satisfactory working classification is that given by Miss Ida Mann[8] in which she divides the cases into the following four groups:

1. Excessive secretion of thyroxin with normal amount of anterior pituitary hormone. These cases are those manifesting only the ocular signs of overaction of unstriped muscle. The ocular manifestations usually disappear with control of the hyperthyroidism, and more or less normalcy is regained. In these cases pathologic examination of the orbital tissues is usually negative. This is the typical thyrotoxic group in which the ocular signs result from overstimulation of the sympathetic nerves.

2. Primary deficiency of thyroxin with compensating excess of thyrotropic hormone secretion. These cases manifest edema of the lid and conjunctiva, impaired ocular motility and an irreducible proptosis. There is an absence of lid retraction and the thick coarse appearance of the skin is more suggestive of myxedema than of hyperthyroidism. These changes are produced by water logging of the orbital tissues.

3. Primary excess of thyroxin followed by thyroid failure or removal with subsequent excess of thyrotropic hormone. The initial symptoms are characteristic of a thyrotoxicosis while the later signs are indicative of over-

activity of the thyrotropic hormone. Every physician has seen cases in which, following a thyroidectomy, there developed a distressing increase in exophthalmos. The interval after operation may vary from a few weeks to several years. In these cases the lids become edematous as do the conjunctiva and orbital tissues, and an increasing irreducible proptosis ensues.

It is this group that is of greatest interest to the surgeon, for how can one foretell the subsequent development of this train of events? While it is not possible to predict with certainty that a progressive exophthalmos will appear postoperatively, it is known that this condition does develop most frequently when certain ocular and general signs are present preoperatively. Sloan has emphasized the significance of these findings and has correctly urged conservatism in cases with manifestations of thyrotropic disturbance. These signs can be summarized as follows: (1) Exophthalmos. A protrusion that develops as the first sign, or one that is out of proportion to the degree of hyperthyroidism present is a bad prognostic sign. Furthermore, if the exophthalmos is asymmetrical it is frequently the result of infiltrative changes which will increase after thyroidectomy. (2) Diplopia is the commonest early symptom of which these unfavorable cases complain. While ocular muscle paralyses may occur in the thyrotoxic group they are rare and if present usually transient in nature. Whereas in the thyrotropic group they are common and more or less permanent. (3) Excessive watering of the eyes is another ocular complaint which is characteristically an early manifestation of thyrotropic exophthalmos. This is probably the result of a dacryoadenitis (Reese)[9]. If increased lacrimation does take place in the thyrotoxic groups it occurs late in the disease and only then when some lagophthalmos exists. (4) The importance of edema of the eyelids or of the conjunctiva as an early sign of thyrotropic disturbance has already been stressed. The presence of these ocular signs do aid the surgeon in differentiating between the operable and non-operable cases. As Sloan has correctly pointed out when these eye signs precede or overshadow the hyperthyroidism it is wiser to avoid surgery. Along with these ocular manifestations there are other findings which are not typical of hyperthyroidism. The high basal metabolic rate so universally found in pure thyrotoxicosis is absent. If any elevation is present it is slight and not infrequently the rate is normal or even subnormal. Similarly the high glucose tolerance curve of hyperthyroidism is lacking. Consideration of the above mentioned eye signs along with these general features is of utmost importance in the prevention of postoperative exophthalmos. The overactivity of the anterior pituitary hormone is frequently held in check by the excess of thyroxin. When the thyroxin supply is removed or reduced materially by operation or medical means, the thyrotropic hormone runs amuck, and the distressing condition known as malignant exophthalmos or exophthalmic ophthalmoplegia occurs. Let the surgeon, therefore, beware of operating upon any patient showing these signs, and if they should arise following operation, it is necessary to raise the metabolic rate to stop the progress of the disease. At the same time measures must be taken to safeguard vision.

It can be argued that groups 2 and 3 are but different phases of the same condition. In the first of these two groups, however, there is no definite knowledge of the overactive thyroid stage because at the time of the initial examination the basal metabolic rate is normal or below normal, and the patient presents none of the usual signs of hyperthyroidism. These cases then are rarely if ever subjected to a thyroidectomy and usually respond to thyroid extract if given in doses adequate to maintain a high metabolic rate.

4. Simultaneous excess of thyroxin and thyrotropic hormone. When such a condition exists there are both spastic and infiltrative changes. The lids are retracted, the palpebral fissures widened and a high metabolic rate is present. In addition to these evidences of thyrotoxicosis the lids are swollen, the conjunctiva is chemotic, there is marked impairment of motility of the eyeballs and a severe proptosis is usually present, all characteristic findings of thyrotropic excess. The management of this group is a very difficult problem, the exact answer for which is unknown. Most clinicians, however, do feel that in these cases thyroidectomy should be used only as a last resort. Here the prevention of the loss of vision from the increasing protrusion of the eyeballs is of paramount importance. Since this usually occurs with increasing activity of the thyrotropic hormone it would seem plausible to direct one's chief attention to the correction of this factor rather than to concentrate on the thyrotoxic element.

Treatment

The treatment of exophthalmos associated with thyroid disturbance must of necessity be concerned with these varied manifestations of the disease. The general measures used in these cases are beyond the province of this presentation except in so far as they influence the ocular condition. It is obvious that the management of these cases calls for close cooperation between the surgeon, internist and ophthalmologist. Knowledge of the causation of these various symptoms, their early recognition and prompt therapeutic measures are the sine qua non of modern treatment.

Every physician should be familiar with the ocular manifestations of thyroid disease not only because they indicate the proper line of therapy, but also because blindness is not an infrequent sequela of improper management. The ophthalmologic problem is preservation of sight; so in addition to the treatment to be carried out by the internist there are several local measures the ophthalmologist employs. Corneal ulceration from exposure is the one complication he fears most. This should be prevented rather than cured. In the presence of any lagophthalmos protection of the cornea is essential. This is best accomplished by the creation of adhesions between the lid margins. These can be placed in such manner as to give protection without obliterating vision. They can be left as long as desired and readily served at any time. Early employment of them before extensive signs of edema occur is most desirable. In the presence of a very large prolapse of the bulbar conjunctiva and pronounced edema of the lids, it is difficult to secure union. The tenseness of the lids may be so great that complete severance of the lateral canthal ligament and free canthotomy are necessary to secure adequate relaxation. Excision of the edematous conjunctiva is advocated by some, but in my experience it accomplishes nothing and should not be employed. In extreme cases in which the proptosis is so severe that the lids cannot be approximated, orbital decompression is used. Since Naffziger's[10] original description of removal of the roof of the orbit, many methods of decompressing the orbit have been published. Naffziger through an intracranial approach removed the entire roof of the orbit, while others, e.g. Guyton[11] have decompressed the orbit through removal of the temporal wall. Any of these procedures produces an immediate recession of the proptosis, but the postoperative reaction is often sufficient to cause a prompt return of the original condition.

Advocates of this form of treatment urge its use early in the disease, but there are others who believe that with proper medical care and prompt insertion of lid adhesions this radical surgery can be avoided in the majority of cases. If one is faced with an extreme proptosis with exposure of the cornea, orbital decompression should be done along with the simultaneous insertion of lid adhesions. Its use in cases in which diplopia is the chief complaint is recommended by some; here too it must be used early before the onset of fibrotic changes in the ocular muscles takes place. Usually these cases, if seen early, respond satisfactorily to proper medical care, while if fibrosis has already set in, orbital decompression is just as disappointing as medical therapy. Ridding these patients of their annoying double vision is a most difficult problem which truly vexes the soul of the ophthalmologist. Oftentimes a complete correction cannot be obtained, but surgical measures on the extraocular muscles themselves offer the best chance. However, operations should not be performed until all signs of activity have subsided and a sufficient time has elapsed to eliminate the possibility of spontaneous improvement.

It is also important to remember that limitation of motility of the eyeballs is often the result of fibrotic changes in the antagonistic muscles. For example, inability to elevate the eye, the most common motor anomaly, may be produced by a fibrosis of the inferior rectus muscle rather than by a parlysis of the elevators. The globe is held down by this inelastic cord and it can not be passively elevated. In these cases before proceeding with any muscle operation the ophthalmic surgeon should always know the degree of fixation of the globe, because liberation of any restraint is an essential part of the surgical treatment.

Summary

The ocular manifestations of thyroid disease are discussed. In view of our present knowledge they are classified as those due to thyrotoxic excess and those due to thyrotropic excess. The classical eye signs of thyrotoxicosis result from overstimulation of sympathetically innervated muscles and largely disappear with the correction of this condition. Emphasis is placed upon the necessity for recognition of the less well known ocular manifestations of overactivity of the thyrotropic hormone, viz.

edema of the eyelids and conjunctiva, excessive lacrimation, diplopia and progressive exophthalmos because by appearing early in the disease they indicate the proper therapeutic approach before irreversible changes have taken place. When such signs do exist thyroidectomy usually is not the treatment of choice.

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Polycythemia Vera: Analysis of Forty-One Cases with Special Emphasis on Neurologic and Psychiatric Manifestations

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ALTHOUGH it is generally known that polycythemia vera may produce neurologic and psychiatric manifestations, the significance of such symptoms is perhaps not fully appreciated. Since the first recorded cases the commonest manifestations of the disease have been reported to be referable to the nervous system. Headache, vertigo, unconsciousness, hemiparesis, neuroses[1-7] and psychoses[3-8] have been observed.

It has been thought that the increased viscosity of the blood with retardation of flow gives rise to cerebral disturbances[9, 10]. That patients with hemiparesis and aphasia often recover completely lends evidence to vascular slowing rather than complete thrombosis or hemorrhage, though pathologic studies have shown hyperemia, hemorrhages in the membranes and brain and thrombotic lesions with resultant softening of cerebral tissue[11].

It is the purpose of this paper to emphasize again the importance of neuropsychiatric symptoms in polycythemia vera. With this in mind 41 cases encountered at the Ochsner Clinic from 1945 to 1949 were reviewed. An attempt was made to determine if there was any correlation between the symptoms and the hematologic pictures. In addition, reponse of symptoms to treatment was noted.

In twelve cases the chief complaint on admission was referable to involvement of the central nervous system. Dizziness was the commonest of these complaints. Weakness, tension, lack of energy, headache, somnolence and numbness were others frequently cited. The next commonest chief complaint was referable to vascular changes in the extremities, such as pain, soreness, aching, tenderness and swelling. Such changes were noted in nine patients and were usually observed in the lower extremity.

Five patients exhibited objective neurologic manifestations or gave a history of cerebral thrombosis or hemorrhage. Of these all except one were in the fifth or sixth decade of life and had elevated blood pressures. The one exception was a patient 39 years old with normal blood pressure. One patient gave a history of paraplegia four years before entry with recovery of motor function after three weeks, but continues to have burning sensations in the right arm and leg to the present time. One patient, who was known to have had polycythemia vera for seven years, had temporary facial paralysis. Another had had hemiparesis on the right side, with dysarthria and homonymous hemianopsia on the left.

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Hemiparesis on the right, with aphasia, was present in another patient. In another there were residua of hemiparesis on the right. In no patient was hemiparesis on the left evident. That the majority of cases of hemiparesis from polycythemia vera are on the right side, and are frequently associated with aphasia, has been previously commented upon by Sloan[9].

Two persons had attacks of unconsciousness, one of which was recurrent and typical of grand mal convulsive seizures, which were improved by phenobarbital. One patient complained chiefly of constantly falling asleep. This would occur while stopping his car for a traffic light, at his desk while making work reports, while eating, and regularly at church and the theater. He would occasionally sleep in a chair at night. His red blood cell count initially was 6,570,000 per cubic centimeter. Two months after receiving radioactive phosphorus he no longer complained of falling asleep and his other symptoms of heat intolerance and headache also disappeared.

Another patient was almost blind in both eyes three years before admission at which time his red blood cell count was 11,000,000 per cubic centimeter. For three years intermittent phlebotomies were performed and later radio-active phosphorus was given with disappearance of not only the blindness but also the headache, paresthesias, indigestion, heat intolerance, and pain in his feet.

The unusual complication of papilledema of the optic disc, as described by Drew and Grant[12], did not occur in any patients in this series.

Forty of the 41 patients exhibited some neurologic or psychiatric symptom. Dizziness, weakness, fatigue, apprehension, dulness, confusion, restlessness, irritability, insomnia, vertigo, depression, instability, fullness in the head, anxiety, compulsions, roaring in the ears, forgetfulness, grogginess, blurred vision, faintiness, paresthesias and impotence were among the numerous neurologic and psychiatric complaints of these patients.

Seven persons admitted drinking excessive amounts of alcohol and in one patient peripheral neuritis of the ulnar nerve developed while he was undergoing treatment, probably because of excessive alcoholic consumption.

The blood pressure was noted to be elevated in the patients with hemiparesis, as previously noted, but no other correlation could be made between the blood pressure and the neuropsychiatric complaints. There was no correlation between the degree of polycythemia, the platelet count, or the uric acid serum level and the type or severity of the complaints.

Treatment was carried out by the internist, but in nine instances the neuropsychiatrist was consulted for additional opinion and treatment. One of the latter patients, a woman 53 years old, had a severe depression, and in addition was tense, confused, disoriented, insomniac and unable to express herself verbally; she responded well to electric shock therapy and phlebotomies. Five patients required psychotherapeutic sessions because of tension, anxiety and depression, one of whom had a severe phobic reaction. The remaining three were referred to the neuropsychiatrist for neurologic opinion.

Thirty-three patients received active treatment for the disease in the form of radioactive phosphorus, phlebotomies, or nitrogen mustard, or a combination of these three. Radioactive phosphorus was given to 22 persons. Examination two to four months after the beginning of this treatment revealed disappearance of neuropsychiatric symptoms in five, improvement in seven, and no improvement in two. Of the ten patients in whom phlebotomies were performed, four improved.

Summary

In 41 patients with polycythemia vera seen at the Ochsner Clinic between 1945 and 1949 the most prominent symptom on admission was referable to the nervous system. All but one had a neurologic or psychiatric complaint. Five had cerebral thrombosis or hemorrhage and four others had serious neurologic symptoms. No correlation between the hematologic picture and severity of symptoms could be determined. Improvement or disappearance of neuropsychiatric disorders two to four months after the administration of radioactive phosphorus was noted in 12 of 22 patients in this series.

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The Months Ahead

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The months ahead are not only vital to American medicine—they are vital to America's way of life. My dear colleagues, let me stress and emphasize to you at this very moment with all the strength and emphasis at my command that this is the year of decision for us. I refer to the election this fall, which will decide whether the American doctor remains free or whether he becomes **slave**. We must elect congressmen and senators who have the courage to stand out against any compromise on American principles. If that isn't done, then we might as well fold our tents and slip quietly into the night of statism.

In the months ahead every doctor must do everything in his power to stop the march of socialism in this country. This is in no sense a matter of party politics. The issue is far above partisanship. Each doctor, as an individual citizen and within his own party, has the right—and more important, the duty—to work for the election of candidates whose views reflect the principles which we believe are of fundamental importance not only to our profession but to our nation.

It is not the place of any organized medical society to engage in political activities; indeed, it would be wrong for any medical organization to do so. Each individual doctor, however, is a free citizen and a free political agent. Every doctor in his own district and his own state has the obligation in this year of decision to give support to the candidates of his choice—the candidates who are on the side of freedom. I hope that in every state doctors will help in the formation of political action committees on a state level for the purpose I have indicated. They must draw into these committees many allies—dentists, druggists, business men, housewives and others.

There is the most urgent need for all doctors to become crusading citizens at this time when our whole American way of life is threatened.

Please don't leave it to George. There are too few Georges. You yourself must make this fight for your professional life. You must vote, every eligible member of your family must vote, all of your friends must vote. The doctor who doesn't vote this year and who doesn't actively work in this campaign to prevent socialization of medicine is not only letting down his profession, and all the men in public life who have championed medicine's cause, but he is also letting down his country, and inviting destruction of the system under which he lives.

I have just returned from Virginia and a visit with that state's fine governor, Governor John S. Battle. It was inspiring to me to find the type of loyal Americans who hold high political office in Virginia. We need more fighters like Senator Robertson and Virginia's esteemed senior Senator Harry Flood Byrd to combat the schemes that are being concocted to transform the United States of America into a Socialist state.

The state of Virginia is extremely fortunate in having two gentlemen in the United States Senate who come closer to exemplifying and activating the principles of Thomas Jefferson and Andrew Jackson than do the nominal leaders of the Democratic party at the present time. Senator Byrd truly called the turn when he recently warned that our present Washington administration is traveling "a non-stop, high-speed highway to socialism." Another great Virginian and the founder of the Democratic party — Thomas Jefferson — once said: "I place economy among the most important virtues, and public debt as the greatest of dangers to be feared."

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Don't we know that the Russians must be watching with a great deal of pleasure our deficit spending and our increasing indebtedness. This cannot continue without ending in bankruptcy for our country and nothing would suit the Russians better than to see us crash economically. Then we will be easy picking for Communism.

Yes, my friends, doctors must be citizens this year as well as doctors. You must alert all of the allied professions too. Every physician must vote. Every dentist must vote. Every nurse must vote. Every druggist must vote. Every voluntary insurance man must vote. All of their wives, their families and their friends must vote. It is not only important to elect congressmen and senators who will not compromise on American principles, but it is equally important to elect governors who will not blindly follow the present socialistic leadership in Washington. We plan to do that in Arkansas.

Why do I say governors? Because governors usually hand-pick the delegates to the national convention where the candidate for President will be selected in 1952. If you expect to stop the socialistic trend in America, then do not vote for a governor who will blindly follow a national leader who advocates socialistic legislation.

We have found two recent wars against aggression and totalitarianism, against the philosophy of dictatorship, against the idea of too powerful a central government control over the lives of people. Yet, we see the tendency in our own nation more and more to turn over power to the central government, to give Washington more and more control over the lives of the American people as subject citizens.

When you and I were children our parents taught us self-reliance. Now the tendency is to teach us not to rely upon ourselves, but to rely on the government. (I have a 50-cent piece here in my hand. I note that it says on there "In God We Trust." Before you know it someone will suggest that we change it to read "In Government We Trust.")

The medical profession of America is concerning itself more than ever before about the trend toward socialism in this country. We realize that socialized medicine is just one part of the structure of complete socialism.

Never before in the history of the American medical profession has there been so great a need for united effort by all its members, regardless of regional or geographic differences, political differences, racial or religious differences, or professional differences.

This is the reason for the National Educational Campaign of the American Medical Association.

It is impossible to conduct the educational campaign without receiving some criticism about this and that. Some of this criticism comes from within the profession and sometimes over rather petty things. I want to mention one such thing right here, because it is close to my heart. This campaign began over a year ago. Just after it started I met a friend of old classic picture 'The Doctor' by Sir Luke 'Keep Politics Out of This Picture'." I thought it was a good idea and had him present it to Whitaker and Baxter, the campaign directors. They adopted it and have used that picture in this campaign and I am very proud to have hanging in my reception room the first copy, autographed by the man who originated the idea.

We have had some criticism regarding the use of this classic picture—some saying that it is not modern—that there is no science in the picture—that the picture is "dated", etc. As Mr. Whitaker has said—"the picture IS "dated", if viewed literally, but on the same basis a great many other things are dated, including the Oath of Hippocrates, the Bible, the works of Dickens, the works of Shakespeare. Yet in meaning they still are vital and pertinent, even though the language is not of our era.

"Similarly, the painting of "The Doctor" is dated; the physician, the patient, and the surroundings have all changed, in outward appearances. But the compassion in that doctor's face and his concern over his patient, are characteristics of a good doctor today, as they were then, and if modern practitioners ever come to a point where they believe scientific knowledge can replace personal interest in the welfare of those who depend on them for life and healing, then we will have lost one of our most effective arguments against government-controlled medical practice.

"The Doctor" isn't just an outdated painting. It is a vivid portrayal of the vitally important physician-patient relationship which has made doctors something more than medical technicians. And that relationship is outdated only in countries which have adopted socialized medicine."

Plans to stimulate the improvement and extension of voluntary health insurance systems, to take the economic shock out of illness, are progressing well. If the government will stay out of this field for another year or so, the American people will solve their health problem voluntarily and in the democratic American way. There is nothing the government can do for the individual in the field of health insurance that the individual cannot do better for himself and at far less expense. Already, both commercially-sponsored and non-profit, medically sponsored groups are working on three highly significant projects: 1) broader protection for **individuals** on a "non-group" basis; 2) further protection for the aged; and 3) greater coverage for "catastrophic," or extended, expensive illness.

Legislation should **not** be necessary to meet the general problem of prepaid medical care. This is a problem that can best be met by public education and diligent work to improve the voluntary systems. We must educate people to consider health insurance as a family essential, rather than a luxury. Doesn't it seem strange that people should be more careful about insuring their automobiles against damage than they are about insuring their wives and children against accident or sickness? My friends, this matter is going to require **education**, not **legislation**.

We need a little house-cleaning in the medical profession here and there too. We need to set up "grievance committees" whereby patients can present their side of doctor-patient problems. The committees can hear complaints from the public and try to remedy them. Many states are setting up such committees. You doctors know that one or two uncooperative doctors who charge unreasonable fees and do other irregular things can undo what hundreds of us are sincerely trying to do. We should have some means of dealing with this type of individual. You know how the rotten apple can spoil the barrel. We cannot afford to let a few members of the medical profession wreck the efforts of thousands of us who are in this fight to retain freedom in American medicine.

But to get back to the serious, immediate problems of the months ahead. We seem to accept freedom as a matter of course. Freedom is not free. It is only preserved by effort and eternal vigilance. We must, as citizens, alert our fellow Americans that the government cannot furnish "something-for-nothing." Whatever is given from Washington must be at the people's own expense.

Let me call your attention to the fact that for sixteen of the past eighteen years our government has run a heavy deficit. In only two years have federal receipts exceeded expenditures. Our national debt has increased in that time from 20 billion to 256 billion dollars. The plan of the present administration seems to be to spend year after year more than it collects in revenue.

The social planners pay no heed to the fact that their programs add tremendously to the tax load of the American people. The tax bill is worrying the citizen today much more than the medical bill. Hidden taxes are fooling the man on the street. The Tax Foundation tells us that there are 150 different kinds of taxes levied on the manufacture and sale of a woman's hat; 116 different forms of taxes on a man's suit of clothes.

Businesses naturally do everything possible to pass on to their consumers practically all tax increases. The man on the street should never be fooled about that—he pays those taxes in the form of a higher price for every product that he buys.

Governments in the past gained power by the sword; now they use the more subtle weapon of money. They use the method of taxes to drain away the earnings of the people and then they dole some of it back to them in the form of subsidies and grants-in-aid. In this way they become **masters** of citizens rather than **servants**. The people go to the government for support instead of the government's going to the people. Hitler used this method in Germany.

In America today you will note that governors of states, mayors of cities and even business organizations go to Washington as beggars only to have returned to them money which the government has previously taken away from them in the form of taxes. Of course, as you all know, this money is returned to them minus the federal brokerage fee. It is not the same dollar that was originally sent to Washington; it is a dollar smaller than the dollar that was sent. A dollar never gets any bigger by making a round-trip to Washington.

I say to you that each of you as an individual is important in this fight. Don't sell yourselves short. The tendency of modern times is to make the individual unimportant. The average man feels wholly inadequate to cope with the many complex situations he faces. He asks himself "What can one man do, anyway?" and arrives at the conclusion that others are better fitted than he to take the responsibility, so why concern himself too much about present day problems? That is taking an inferior attitude, a defeatist attitude. Most of our limitations are self-imposed. A "do-nothing" attitude is inexcusable. Don't sell yourselves short, because in the months ahead you can do a wonderful job for the future of American medicine.

It behooves you to take a keen interest in political affairs. Democracy functions through politics as you well know. It is inconsistent for us to criticize actions of politicians, while we ourselves evade political service or interest in political affairs. Doctors have a tremendous political potential with their patients and friends if they would only use it.

If we doctors of America want to remain free doctors, if we want to continue by our own initiative and judgment the work that has made America the healthiest great nation in the world, we must decide now to assume in full our duties as private citizens. We must inspect our own house, and see that it is kept immaculate. We must give unstintingly of our support to those who can maintain in local, state and national legislative bodies the eternal vigilance that is the price of our precious American freedom. **It is our year of decision.**

Coarctation of the Aorta

A REPORT OF TWO CASE HISTORIES

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The adult type coarctation of the aorta is a congenital anomaly characterized by a constriction of the aorta in the region of the ligamentum arteriosum. In most cases this constriction is just distal to the left subclavian artery; however, in a few atypical cases this constriction is between the left subclavian and left common carotid arteries. According to Abbott, the cases can be classified in three degrees of stenosis, determined by the size of the lumen through the coarcted area. The cases of moderate stenosis constitute from 22 to 23 per cent of the total number of cases, and the lumen of the aorta is .5 cm. or more in diameter. The cases of extreme stenosis constitute from 41 to 54 per cent of the total number and the size of the lumen is less than .5 cm. in diameter. The cases of complete stenosis constitute from 23 to 25 per cent of the total number, and in these only a hair, bristle, or fine sound can be passed through the lumen of the aorta.

For some unknown reason coarctation of the aorta occurs four to five times as frequently in the male as in the female. In different series the adult type has been reported in patients varying in age six months to ninety-two years.

The average age at death is thirty-five years, and 61 per cent of the patients die before the age of forty. The principal causes of death are; rupture of the aorta, bacterial endocarditis, or endoarteritis, congestive heart failure and rupture of an intracranial aneurysm. The majority of deaths from rupture of the aorta or from intracranial aneurysm occur in the second and third decades, those from bacterial endocarditis or endoarteritis occur in the first five decades, and those from congestive heart failure in the third and fifth decades. An interesting feature of the cases who die from congestive failure is a high incidence of associated cardiovascular malformations or acquired lesions, such as those caused by rheumatic fever.

There are two congenital anomalies that occur frequently in cases of coarctation of the aorta. A bicuspid aortic valve is the most common and has been reported in 23 per cent of the cases. In Abbott's cases 50 per cent of these died with rupture of the aorta. Another feature is that the bicuspid aortic valves are especially prone to develop a subacute bacterial endocarditis. The other congenital abnormality frequently seen with coarctation of the aorta is a congenital aneurysm of one of the cerebral vessels. Rupture of one of these vessels accounts for about 10 per cent of the deaths reported from coarctation of the aorta.

The diagnosis of coarctation of the aorta is very important now that surgery can be performed. This is not difficult in most cases if the possibility of this condition is kept in mind whenever a patient is seen who has hypertension. In any case of hypertension the abdominal and femoral arteries should be examined for pulsations. If the pulsations are not entirely normal, then a careful search should be made for other evidence of coarctation of the aorta, such as, systolic and aortic murmurs, thrills, and bruits over the upper part of the chest. Even if a careful examination is performed, it has been estimated by Hines that about 5 per cent of the cases will be missed. In this 5 per cent fall the rare cases with normal blood pressure in the upper extremities and those with good abdominal and femoral pulsations.

Very few patients have symptoms. The most common symptoms that occurred in the series of cases in the Mayo group were dyspnoea and headache. Other symptoms have been noted, especially, palpitation, epistaxis, thoracic pain, visual disturbances and intermittent claudication. The diagnosis is made on the basis of the physical examination and x-ray findings. The type of hypertension is of no help, and a persistent hypertension does not have to be present. A very important diagnostic finding is a lower blood pressure in the legs than the upper extremities. In the Mayo group series there are reported two cases who had normal blood pressure, one of an eight-year-old boy and one of a 42-year-old man, both of whom had coarctation of the aorta diagnosed by routine x-ray films.

A systolic murmur located over the base of the heart and often transmitted to the back between the scapulae is the most frequent murmur that has been noted. If this murmur is more pronounced posteriorly, it is of more diagnostic significance; although in most cases the precordial murmur is the louder. In one case reported the murmur was only posteriorly. In most every case a systolic murmur is present. A diastolic murmur is not found in uncomplicated cases of coarctation of the aorta, and when present it has been found to be associated with aortic valvular deformity either due to bacterial endocarditis, bicuspid aortic valves, rheumatic endocarditis, or to patency of the ductus arteriosus.

The degree of collateral circulation is important in making a diagnosis. Tortuous vessels may be observed in intercostal, axillary, suprasternal, carotid, deltoid, brachial, supraclavicular, suprascapular, subscapular, interscapular, or superficial epigastric vessels.

Radiological findings are of definite aid in the diagnosis. As has been mentioned; at the Mayo Clinic, diagnosis was made on routine chest findings in two cases with normal blood pressure in whom the diagnosis was not suspected clinically. The most important finding is that of rib erosion and notching of the lower part of the ribs. Quite infrequently no notching of the ribs is seen in patients who have coarctation of the aorta, due especially to the fact that a high degree of stenosis must be present to cause sufficient enlargement of the intercostal arteries for this to develop. It is also thought that this sign depends somewhat on age, as it is not usually seen until after the second decade of life; however, there is one case reported in which rib erosion was determined at the age of nine months. This notching is the only radiological finding that is diagnostic of coarctation of the aorta. Other findings, such as, a small or absent aortic knob, or hypertrophy of the left ventricle, are of some help. Angiocardiography is of value at times in determining the constricted segment of the aorta, and at times proves valuable information to the surgeon.

In general there are two types of surgical procedures that are used in the removal of the coarctation. The one that is preferable is a resection of the coarcted area. In some cases, however, a resection cannot be performed, and in some of these cases it is possible to cut the left subclavian artery and anastomose it to the distal portion of the aorta. Gross has reported one case in a child seven years of age in which the removal of the coarctation left aortic ends which were widely separated. He was successful in suturing an aortic graft 5 cm. in diameter which had been removed from another person thirty days previously in its place to fill this gap. In a series of sixty cases operated on by Gross there were only seven deaths, which was an approximate operative mortality of 12 per cent. The age in Gross's series varies from five to fifty years. An important factor in the early diagnosis is that surgery is more successful in the early age group, and surgery should not be performed over the age of thirty or thirty-five due to the loss of elasticity of the aorta. It is evident now that in the cases in which the aortic obstruction can be removed the hypertension will disappear.

Patient AMS white female age fifteen. This was a full-term, normal delivery with no abnormal findings for the first five or six years of life. At age seven she had a tonsillectomy at which time no notice was made of any abnormal cardiac findings. A "murmur" was said to have been present at about eight or nine years of age, but there was no elevation of blood pressure at this time. Communication with the pediatrician responsible for her condition until age twelve, states that nothing other than a murmur was present and that this was thought by him to represent some form of endocarditis.

Following an acute respiratory infection in February 1947, at which time the child was confined to bed for a longer than usual period of time and following which she ran a low-grade type of fever for several weeks, a harsh systolic murmur developed at the base of the heart transmitted into the neck vessels. At this time the pediatrician found her blood pressure varying from 120 to 135 systolic and 75 to 80 diastolic. Because of the character of the heart sounds, the elevation of blood pressure, and the temperature elevation, she was referred to us in May 1947. At this time physical examination disclosed a 13-year-old white female 5' 7" tall weighing 125 pounds. Nose and throat examination was normal. Examination of the chest was normal. Pulse was 72 with normal sinus rhythm and no pulse deficit. Blood pressure was 145/75 in both arms. The heart sounds were normal. No gallop rhythm was present. There was a loud, rather harsh, systolic murmur heard at the base of the heart transmitted into the neck vessels, and was heard posteriorly in the upper thoracic area. No diastolic murmur or thrill was present. The lungs were clear. The abdomen was normal. There was no edema, cyanosis, nor clubbing of the extremities, but no dorsalis pedis nor posterior tibial pulsations could be felt. An electrocardiogram was normal. The heart shadow was slightly larger than usually seen in this age patient and there was no configuration suggestive of mitral stenosis. Several blood cultures were obtained, none of which revealed any bacterial growth. Several blood counts showed a rather consistent hypochromic type of anemia and sedimentation rates were within normal limits. Urinalysis was normal, Wassermann negative.

The diagnosis of coarctation of the aorta was made and the presumptive diagnosis that there was a superimposed bacterial infection, although no proof was found. The patient was observed and treated symptomatically, and throughout a two-year period a progressive voluntary restriction of activity, because of fatigue and decrease in exercise tolerance, was noted. She developed an acute respiratory infection in February 1949, was hospitalized, and blood cultures were negative. She was given 600,000 U of penicillin daily for ten days, and there was a remission of the irregular low-grade temperature elevation which had been noted for the past 18 months.

At the completion of the school term she was referred in June 1949 to Dr. Paul White of Boston, Mass., for consultation. Diagnostic of coarctation of the aorta was confirmed and surgery was performed by Dr. Robert Gross on June 16, 1949. The following is quoted from his report. "In the first part of the descending aorta a very long area of narrowing was found, and on excision of this segment the lumen was found to be only three millimeters in diameter. The remaining ends of the aorta were brought together, to obtain an opening which was about ten millimeters in diameter. I would have liked to have made it a little larger but it was impossible to do so. The child went along with a very satisfactory convalescence. I sincerely hope that things go well for her, and indeed I think that there is a fairly good chance that her pressure will subside to normal or to a satisfactory level."

At present blood pressure level in the arms is 120 to 125/70. Palpable pulsations are present in both the dorsalis pedis and posterior tibial arteries, though not as much as one would wish for. Symptomatically this child is considerably improved; and, in her own words, feels that the surgery was worthwhile. It is unfortunate that such a large area of coarctation was found and the surgery was more difficult than normal, because the opening of 10 millimeters in diameter is not as much as one would hope for. It will be interesting to watch his patient's future course.

Patient AMcG, while female, was twenty-three years of age when first seen by us in June 1945. This patient was referred because of the findings of elevated blood pressure. Her past history was uneventful. As far as records could be obtained she was a normal, full-term delivery with no abnormal cardiac findings during early life. The history is not clear as to when the elevated blood pressure was first noted, but it was within two or three years of our first examination. She appeared to be very little incapacitated or inconvenienced by her condition. She had had recurrent attacks of sore throat accompanied by a tonsil tab.

Physical examination revealed a 23-year-old white female, well developed, 5' 6" weighing 110 pounds. Physical examination was uneventful except for the cardiac findings. Blood pressure in both arms ranged from 150 to 170 systolic and 100 diastolic. Pulse rate was 74 with a normal rhythm. Heart sounds were of good quality. A high pitched rough systolic murmur was heard near the base of the heart and transmitted into the neck vessels. A faint murmur was heard posteriorly in the thoracic area. The patient's chest was unusually thin and palpation of the chest revealed pulsations in the intercostal arteries from the 4th to 8th ribs posteriorly. There was no pulsation in either femoral artery and blood pressure determinations could not be determined in the legs. Blood count was normal, urinalysis was normal, and Wassermann was negative. X-ray of the chest was negative except for a slight notching of the undersurface of the ribs from the 4th to the 8th.

Because of the recurrent sore throats and the possibility of superimposed infection of coarctation of the aorta, the tonsil tab was removed in December 1946. Following this the patient had had no further respiratory symptoms. She moved to Washington, D. C. and I received communication from Dr. Edgar Davis stating that he had successfully resected the coarcted aorta in November 1948. On leaving the hospital the blood pressure was 112/98. This patient was back in Jackson in June 1949 and the physical examination revealed essentially the same findings as had been noted in 1945 except the blood pressure ambulatory was 145/90. The heart sounds were essentially the same except for a slight diminution in the murmur previously heard and a very good pulsation was noted in all of the vessels of the legs.

SUMMARY: Coarctation of the aorta is very easily diagnosed in about 95 per cent of the cases if a careful physical examination is made with this condition in mind. Surgical correction of this condition is now successful with a fairly low mortality rate. Class in which surgery is successful shows a return of the blood pressure to normal.

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In this modern and enlightened day, with our clearer understanding of the moral, ethical and spiritual character of God, religion is still the touchstone of human character, the inspiration of human action, and the force behind man's highest achievements.

The Psychosomatic Approach in Medicine*

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MANY physicians have become a bit weary of the term psychosomatic. After all, psychosomatic medicine isn't new, the general principles having been a part of medical knowledge and the art of medicine for centuries. However, this art depends a great deal upon the experience and insight of the physician. And now, the art is becoming somewhat more of a science, with more extensive gathering and analysis of data concerning the influence of emotional factors in the etiology and treatment of certain symptoms and diseases. I would not presume to be able to add greatly to the medical literature on this subject—masterpieces have been written long before the term psychosomatic was coined, and excellent articles are being published in medical periodicals every day.

The term psychosomatic came into prominence in 1939, with the publication of the journal, **Psychosomatic Medicine.** As the publishers of this journal point out, "Psychosomatic medicine is not a medical specialty, parallel with internal medicine or psychiatry, but an approach which might be applicable to almost any medical, psychological, or physiological problem."

Physicians have become increasingly conscious of the problems of functional symptoms and illnesses in the past twenty years or so. However, we still have a lot to learn about bodily expression of emotional stress. Anxiety, of course, is the chief symptom producer, anxiety and depression. Years ago Osler said, "Syphilis is the great imitator." Perhaps we should now say that anxiety is the great imitator—anxiety with all its varied somatic symptomatology and with all the interpretations and misinterpretations that patients, and physicians, too, are apt to place upon these manifestations. Anxiety or depression with their somatic equivalents are readily recognizable if the physician is inclined to place any value at all on their recognition. Physicians have always been rather reluctant to explain symptoms on a neurotic basis, feeling that it places a stigma upon the patient, the patient has a natural antipathy to such a formulation, and last-but-not-least the physician fears possible humiliation if he diagnoses "no disease, only psychoneurosis", only to have the patient later show up with organic disease, or drop dead, or some such. Some day, perhaps, internists may feel humiliated if they have not recognized and adequately treated a psychoneurosis. Some authors feel that what is needed is not necessarily more psychiatrists, but rather, more "psychiatric consciousness" on the part of the general medical man. The diagnosis of a neurosis is not made by exclusion but by observing the characteristic symptoms and signs of the neurosis.

In past years, when physicians have thought of neurotic symptoms, they have been too much inclined to regard them as more or less imaginary and lacking justification. But they now generally realize that there are disturbances of physiology behind most of these complaints. We recognize various symptoms as being produced by autonomic nervous system imbalance with vasomotor instability, with prolonged spasm of smooth muscle (gastrointestinal, respiratory, vascular), and with altered secretion of glands (mucous, digestive, endocrine). The term "psychogenic" should not be taken as connoting "imaginary" or "hallucinatory." Imagination and emotional stress may initiate the abnormal functioning of organs, and imagination may lead the patient to deduce that he has something vitally wrong when actually he hasn't, but the bodily distress is real. Headache, the commonest psychosomatic symptom, is most often produced by dilatation and edema of blood vessels, intra or extra-cranial, the brain itself being insensitive to pain. Vasomotor phenomena may perhaps be the mechanism of some visceral pain. It seems more than likely that a good deal of pelvic pain in the female is due to some such mechanism. There seems to be some sort of reciprocal relationship between the circulation in the pelvic organs and the circulation in the head. We know that spasm of G I smooth muscle can be painful, as in pylorospasm and irritable colon. Hyperemia, hypersecretion, hypermotility (or hypertonus), on the one hand, and hypofunctioning on the other hand, with various combinations of these factors, can produce a wealth of symptoms. Moreover, the abnormal functioning of various organs, or organ systems, may eventually lead over to organic changes and organic disease. Alterations of glandular secretions (mucous, digestive) can pave the way for mucosal infection or ulceration, for instance. And prolonged nervous tension with prolonged spasm of vascular smooth muscle may lead over to hypertension. Psychiatrists pointed out years ago that the first organ system in the body to reflect emotional stress is the G I tract, next in order the respiratory system, next the cardiovascular system, and finally the musculoskeletal system.

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*Read at quarterly meeting of the Northeast Mississippi Medical Society, December 6, 1949, Tupelo, Miss.

At the American College of Physicians' meeting in New York last March a great deal was said about the emotional aspects of various diseases, particularly as regards etiology. Many organic diseases for long years classified as idiopathic are now generally being recognized as emotionally determined, with constitutional and other predisposing factors also involved, needless to say. Some of the diseases now thought of as more or less determined by emotional factors are hypertension, hyperthyroidism, coronary disease, some peripheral vascular diseases, diabetes, asthma, many skin manifestations, ulcerative colitis, peptic ulcer and arthritis. It is more than likely that this list will be greatly extended as time goes on.

Recognition of the psychic element in etiology of diseases may not alter greatly our methods of handling our cases, but sometimes it will add something of much value. Obviously, practitioners can't stop to offer intensive psychotherapy to many patients with minor complaints, but they can become adept at recognizing situations where more investigation and treatment along psychiatric and psychotherapeutic lines is indicated. The trouble is that history taking, and interviewing patients, takes time and patience, and most physicians have too many patients to have much time or patience. It is like Dr. Adolf Meyer's criticism of psychoanalysis — "Psychoanalysis is all right, but it takes so much time, it is only for the physician deluxe and the patient deluxe." As internists and family physicians, our time for individual patients is pretty limited. Patients don't mind talking, and should be allowed to talk more, but in the end they want quick relief, if not by surgery—at least by medicine—something tangible.

Surgeons should, of course, develop and cultivate their abilities to recognize psychosomatic manifestations. Many unnecessary or useless operations would be avoided thereby. I do not mean to belittle surgery—in many conditions an ounce of surgery is worth more than a ton of talk. There may perhaps be an emotional factor in etiology of appendicitis—some observers believe there is — but the treatment of acute appendicitis is appendectomy, not psychotherapy. On the other hand, appendectomy has never yet permanently benefited a spastic colon, although many appendectomies have been performed in past years for such, with the belief that the symptoms were the result of so-called chronic appendicitis. Surgeons should use extreme care in advising operation in elective cases, whatever the condition, in which the indications are not pretty strong. They should realize that while operation may satisfy the patient's demand for positive action toward relieving his distress (and frequently temporary emotional relief will follow) yet in many cases ill-advised surgery may harm the patient psychologically. We all see patients with neurotic (psychosomatic) symptoms who have been subjected to repeated operations, and looking back anyone could see that the surgery, most of it, was ill advised. Yet, prior to each operation, the patient probably made out such a strong case for himself, that good medical men, as well as good surgeons, many have felt the surgery definitely indicated. Even psychiatrists might have been fooled part of the time, though probably not all the time.

Symptoms of organ neurosis sometimes improve as general nervousness becomes more severe, and visa versa. No patient with an ordinary organ neurosis is ever very eager to look into the psychiatric aspects of his illness. He prefers to dwell upon the possibilities of physical disease (ulcer, appendicitis, food idiosyncrasies, cancer, etc.) causing his nervousness, rather than upon the possibility of the nervousness and unhappiness causing the physical distress. Then sometimes we see patients who have run the gamut of psychosomatic symptomatology, and emerge suffering from severe and obvious anxiety, tension, and depression. They are then seen by the psychiatrists, who treat them, and are apt to mistakenly conclude that their therapy has promptly relieved the somatic symptoms that the internist had been treating in vain for a long time! Another phenomenon that we may sometimes recognize is a certain periodicity in psychosomatic symptoms, comparable, perhaps, with periodicity of mood swings in manicdepressive psychosis. We may see a patient suffering greatly from some psychosomatic symptom and despairing of relief or cure. Such a patient we can help as best we can, realizing that there will probably sooner or later be a swing back toward normalcy, whatever we do or whatever the patient does.

Recognizing emotional factors is one thing, but being able to do something about them may be more or less omniscient, but he is not omnipotent, and he is often apt to be faced with the ancient injunction, "physician, heal thyself." He will alsc face the truth of the saying, "If to do were as easy as to know what 'twere best to do, chapels had been churches, and poor men's cottages, rich men's palaces." If the physician could see that the patient were provided with wealth, power, love, and glory, with future security guaranteed, cure might be more certain. These things, however, are hard to acquire and hold, and it may be that even Uncle Sam will be unable to provide them all.

The internist can help the patient see and evaluate his problems more clearly, and to make certain adjustments in his situation, or in his emotional reactions to his situation, that will relieve his anxieties. He can encourage patients to keep on trying to make satisfactory lives for themselves and their families, in spite of trouble and discouragement. For a full-blown psychosis or unusually severe psychoneurosis he will, of course, refer the patient to a psychiatrist. Sometimes a course of shock therapy will cut short what would otherwise be a prolonged, expensive, dangerous, and pitiable depressive illness. Some severe psychoneuroses may require prolonged expert psychotherapy. Most psychoneuroses, and organ neuroses, however, will have to be treated by the family physician. He will continue to use sedatives and antispasmodics, etc., but his therapy doesn't end there. Sometimes his mere presence and interest and moral support are all that the patient needs. He adds (and multiplies) reassurance p r n. He may, from his large background of knowledge and experience, give direct advice in personal matters. In addition, he should, more often than has been his custom in the past, listen to the patient long enough to "let the patient tell him the diagnosis," and long enough to let the patient begin his own treatment by mental catharsis, or aeration of his conflicts. He will have to guide the discussions somewhat and not let each interview become a mere organ (symptom) recital by the patient. Psychotherapy is not a patented process used by psychiatrists only. Most physicians use it daily, either more or less effectively—it is inherent in the physician-patient relationship.

In this discussion I have haphazardly lumped together proven concepts and working hypotheses, many obvious truisms, some erroneous ideas and statements that I'll later regret, and a few original observations. Nothing really new has been offered, but perhaps a little additional light has been shed upon the significance of the psychosomatic approach in medicine.

AMA PROGRAM OF ACTION

1. Establishment of emergency medical service committees in each state medical society.

2. Each state must urge upon the governor the absolute necessity for adequate state civil defense enabling legislation.

3. Each state must urge the governor to appoint a state director of civil defense with the necessary responsibilities and authority to act.

4. Each state should appoint a Civil Defense Advisory Committee to advise the governor and the civil defense director. Representatives of state medical societies should serve on this advisory committee.

Painless Hematuria*

ONNIE P. MYERS, M.D.
Jackson, Miss.

Blood in the urine is an alarming sign to patients and this one sign brings them to the doctor immediately for advice. This is as it should be. The cause of bleeding into the urine should be diligently and carefully searched for, whether gross, microscopic, continuous or intermittent, painful or painless. In some instances it proves to be a sign of a minor and more or less unimportant disease. On the other hand it is the first warning of a grave condition and one that needs prompt and adequate treatment. Blood may originate from kidney, pelvis, ureter, bladder or urethra. It is the physician's responsibility to detect first where the blood is coming from, and second to advise the patient as to the seriousness of this condition. We are prone to overlook a history of blood in the urine, and let a golden opportunity pass and fail in the recognition of an early malignancy of the urinary tract, at a time when treatment is so vital, if the patient is to recover.

This discussion is limited to painless hematuria. I should like to present a case which illustrated several angles of this problem. I first saw this patient, a colored man aged 38, at his home on January 23, 1948, the afternoon of the snow. He complained of hoarseness and blood in his urine. He had no fever, but stated that he had been coughing for about two years, but never coughed up any material. He voided in a glass and the urine was grossly bloody, beginning at the first of urination and lasting throughout the entire voiding. He was admitted to this hospital January 24, 1948.

Chief Complaint: Bloody urine and hoarseness. He had no pain, nor discomfort, but was weak. Diuria 6 to 8 and nocturia 3 to 4 times. With each voiding he noted blood throughout the entire act.

Present Illness: He stated that he has been hoarse for about two years, and has had a persistent non-productive cough, and has lost about 20 pounds of weight during this time. He does not recall any chills, nor does he think he had had any fever. He has had a good appetite all along. He first noted blood in his urine in 1940, which lasted 4 or 5 days, for which he was given some pills, and a liquid medicine. His urine cleared up promptly, and remained clear until 1945, at which time it reoccurred, lasting three or four days. This time he had some swelling of his right testicle, but no pain. Both conditions cleared with bed rest. His health seemed good except loss of weight. No digestion, but a persistent cough and constant hoarseness.

Past History: In December 1947, he was admitted to this hospital because of painless hematuria. While here an intravenous urogram was made, and a cytoscopic inspection of his bladder done. Notation on his chart states "No ulcerations nor tumors seen in the bladder, nor urethra. No bleeding from orifices seen at this time." Urine cleared and he left the hospital. Urinalysis on this admission showed a 4-plus albumen, and a sediment loaded with red blood cells:

Red Blood Cells, 4,400,000; Hemoglobin 94%
White Blood Cells 7,000.

Social History: Patient has been a farmer most of his life. He is now employed by a manufacturing company. Married, has no children. Father living and well, aged 60. Mother died at age of 56 with dropsy. One brother died as a child. Two sisters living and well. No tuberculosis, cancer, blood dyscrasias, or venereal diseases that he knows of in his family.

Physical Examination: Blood pressure 140 over 90. Well developed and well nourished colored male, not in any acute distress. **Head:** Negative, no ulcerations of mouth, or throat. **Neck:** No masses nor abnormal pulsations, no rigidity. **Chest:** Expansion equal and good. **Lungs:** Clear and resonant, no rales nor adventitious sounds. **Heart:** Not enlarged, regular rhythm and normal rate. No murmur. **Abdomen:** No scars, masses, rigidity, nor tenderness. **Liver**, spleen, and kidneys not palpated. Some tenderness in right costovertebral angle. Positive fist percussion on right side.

Rectal Examination: No hemorrhoids, fissures, nor ulcerations. Good muscle tone. Prostate not markedly enlarged — soft, no masses, no nodules, seminal vesicles not palpable. **Secretions:** Occasional white blood cells.

Genitals: Normal adult male, no hardening of vas on either side.

Extremities: Normal.

Reflexes: Physiological.

Laboratory Reports: Laboratory reports were as follows: **Urinalysis**—Specific Gravity 1.020 4 plus albumen, many red blood cells, no casts. Red blood cells 3,700,000; Hemoglobin 74%; white blood cells 7,100. Normal differential.

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*Read in March 1949 before staff meeting of Mississippi Baptist Hospital.

Blood chemistry: Sugar 100 mg., urea 10, creatinine 1.8, Wassermann negative.

Cystoscopic Examination: Cystoscopic examination revealed, normal urethra and bladder. Gross blood oozing from right ureter. Specimens collected from each ureter. Indocarmine appeared in good concentration on left in five minutes, on right fifteen minutes with poor concentration. Retrograde pyelogram made.

Reported as follows: Retrograde studies still show an unusual appearance of the pelvis and calyces on the right side. (Gross bleeding from the ureter is noted cystoscopically.) The lower calyces of the left kidney show an unusual appearance and on reviewing the previous intravenous studies the same appearance is noted. The bladder is not visualized at this time so nothing can be added concerning the prostate which was previously thought to be enlarged. There appears to be some evidence of calcification in the parenchyma of the right kidney, and one must consider the possibility of tuberculosis rather strongly in this case.

Film of Chest: Film of chest shows a healed primary complex in the left hilar region.

The heart and lung findings are otherwise negative. Urine from each kidney negative for acid-fast and other organisms. Specimens sent to the State Laboratory for culture and guinea pig inocculation. Because of hoarseness, Dr. Van Dyke Hagaman, on E.E.N.T. service, was asked to see this patient. No evidence of tuberculosis seen in region of throat by Dr. Hagaman.

Differential Diagnosis in the Order Possibilities: 1. Tuberculosis must be considered because of recurrent painless hematuria, nonproductive cough and weight loss. Against this diagnosis are: a) chest negative, b) nose and throat negative for tuberculosis, 6) urine negative for acid-fast bacilli, d) no ulcerations in bladder (guinea pig inoculation negative for tuberculosis as reported later).

Glomerulonephritis: 2. Blood pressure suggests some involvement of cardiorenal system. No casts, normal specific gravity, and no albumen, when urine is free of blood. Bleeding from right side only is against this condition.

Polycystic Kidney Disease: 3. Polycystic kidney disease. Kidney not palpable. (Only approximately 25% of polycystic kidneys are palpable). X-rays not compatible with this disease. This disease occurs in infants and young adults. No history of kidney trouble in the family.

Tumor of Bladder: 4. Cystoscopic study eliminated bladder tumor and proved hemorrhage from higher up.

Malignancy of Ureter: 5. Ureterogram does not suggest tumor of ureter. Papanicolaou's stain negative for tumor cells. Many primary tumors of ureter are overlooked, as proved recently.

Malignancy of Right Kidney: 6. X-ray suggests old hemorrhage, rather than filling defect. Delayed function on involved side suggestive of right kidney damage. Negative tumor cell stain. Loss of weight suggests this condition. No demonstrated metastasis.

With this stage of work-up, it was suggested to the patient that exploratory incision be made to determine the exact diagnosis and to control the severe hemorrhage. He first consented but on the elected day he declined and asked to be discharged at his own responsibility. This was done. He left the hospital January 30, 1948. He took vitamin K, rutin, and ascorbic acid, and liver and iron preparations while in the hospital and at home.

On February 4, 1948, he was re-admitted because of profuse, painless bleeding. Again he was cystoscoped and blood was seen spurting from right ureter. No pyelogram made due to economical situation. At this examination his blood count was: red blood cells 3,100,000; hemoglobin 60; white blood cells 5,750. He was typed and cross matched, and 500 cc. of whole blood obtained to be given at surgery. Under spinal anesthesia on February 6, 1948, the usual lumbar incision was made. Gerota's fascia was opened and kidney freed relatively easy, but encountered few adhesions inferior and anteriorly. Palpation of the lower pole of the kidney seemed more firm than did the other portion of the kidney. Posteriorly there were numerous grayish motley patches on the surface of the kidney. The ureter was identified and dissected up and it appeared normal in the upper third. It was clamped, ligated and cut. The artery and vein were separated and ligated individually. Patient received 500 cc. of whole blood during the procedure and shock was minimal. Patient had an uneventful recovery. On February 17, 1948, Dr. Van Dyke Hagaman operated on his throat, removing a benign fibroma.

Pathological Report of the Kidney: 1) hemangioma of renal papilla, 2) single cyst of renal papilla, and 3) fibroma of kidney.

This patient was seen in the office on March 1, 1948, wound well healed, and complained of weakness. On March 6, 1948, he was seen again, this time complaining only of constipation. He was last seen March 24, 1948, and he had gained ten pounds of weight. No complaint, was advised to return to work.

Despite the fact that angioma is one of the most common types of neoplastic lesions, of unlimited tissue and organ distribution, one concludes that it is a rather rare occurrence when it is noted that only 45 cases of renal angioma have been recorded in medical literature to date. In all probability many cases have been seen, but have not been reported, while others have escaped detection, and some have been symptomless.

Verchow is credited with the concept that the kidney is the second viscus of choice for location of angiomata, the liver having priority.

In the Journal of Urology in 1944, Melicow, in a comprehensive report from the Squier Urological Clinic, analyzed and classified 190 renal tumors with nephrectomy over a six-year period in which there was one hemangioblastoma in a case of Von Hipple's disease. In the same year Rottimo and Mohan presented a series of 169 nephrectomies over an eight-year period which includes three cases of renal hemangioma.

Renal Vascular Tumors: Renal vascular tumors, excluding telangiectasis and vorix, may be classified as follows: **Benign**, capillary hemangioma, plexiform hemangioma, and cavernous hemangioma.

Malignant: hemangiosarcoma and hemangioblastoma.

Capillary angioma exists commonly in the form of a small papillomatous lesion projecting into the calyses or renal pelvis. The plexiform and cavernous hemangiomata and the hemangiosarcomata may be found in any portion of the kidney, but usually directly under the epithelial lining of the calyses or pelvis. These tumors may exist as a solitary lesion or may be concomitant with similar lesions elsewhere in the body. They may vary in size from pinhead to several centimeters. As to sex distribution, the incidence is about equal. The majority of cases occur in the fourth and fifth decades of life, but apparently no age is exempt.

Chief Diagnostic Symptoms: The chief diagnostic symptom presents uncontrollable hematuris associated with significant absence of radiological evidence. Pain may be present in any degree or absent. Varicosities, small infarcts, and early primary papillary carcinoma of renal pelvis, present, in many instances, a diagnostic picture not unlike cavernous hemangioma.

Hemangioma:

Hemangioma is a tumor consisting of newly formed blood vessels; however, it becomes difficult to determine whether newly formed blood vessels are true neoplasms or a dilatation of a previously existing vessel (telangiectasis).

Capillary Angioma and Cavernous Angioma: Have structures similar to erectile tissue, "sponge like," consisting of large blood spaces or sinuses lined with epithelium.

745 Carlisle St.

DOCTORS ARE CITIZENS

1. Legally, it is imperative that doctors who engage in active support of candidates do as individual citizens—and not under the auspices of their medical societies.
2. The American Medical Association cannot legally contribute to or expend funds in support of, or in opposition to, candidates for federal office.
3. State and county medical societies, whether incorporated or not, are subject to the same limitation.
4. The law prohibits a medical society from:
    a. Endorsing a candidate, where it involves expenditure of general corporate funds
    b. Contributing funds to any candidate for federal office
    c. Using medical society letterheads or facilities to advance work in behalf of a candidate
    d. Sponsoring any other form of advertising material for a candidate.
5. Individual forming political committees must not make use of any official position or office which they may hold or occupy in any organization.
6. These limitations, which appear in the Hatch Act, the Corrupt Practices Act and the New Criminal Code, are sometimes violated by careless citizens.

American doctors must conduct their activities wholly within the law.

A Study of Hysterectomies Done at the South Mississippi Charity Hospital Over a Two-Year Period

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THIS study of 205 consecutive hysterectomies performed at the South Mississippi Charity Hospital was the result of a desire to evaluate the benefit of our blood bank and present to the profession a picture of some of the work done by one of Mississippi's five charity hospitals. For general information it should be made clear that these hospitals are administered by the Eleemosynary Board on a budget approved by the house of representatives and the senate. The superintendents are appointed by the governor and the board with the approval of the house and senate. The staffs at these institutions are composed of the superintendent, a resident staff when available, composed of men desiring training and experience but not demanding credit (none of the charity hospitals are approved for internship or resident training) and the visiting staff composed of practicing physicians of the surrounding territory who give freely of their time and talent for the care of the indigent patient.

In a report published in **Surgery, Gynecology** and **Obstetrics,** 85: 176-184, August 1947, Roger S. Sidall and Harold C. Mack of Harper Hospital in Detroit reported 119 deaths in 6,692 abdominal hysterectomies. A further study of mortality rate revealed it to be 3.7 per cent between 1928 and 1932. The mortality rate was reduced to 1.65 per cent for 1933 to 1940 and .78 per cent for 1941 to 1945. The reported mortality rate at present is .76 per cent for subtotal hysterectomies and .8 per cent for total hysterectomies. During this two-year period study at our institution we had one fatality giving us a mortality rate of .05 per cent.

It is a fast growing tendency at our institution to do total hysterectomies in the women with extreme cervical lesion or those in the age group passed 38. Approximately one-half of this study was done when we were leaning heavily on the opinion that the ovaries should best be removed in the women passed 43 if she were laporotomized for hysterectomy. We felt that by so doing we removed the malignant potentialities of the ovaries and thereby precluded any subsequent death from gonadal carcinoma as well as subsequent surgery for ovarian pathology. Contrary to that policy the last approximately one-half of this study has followed the teaching of Victor Booney and his followers in England as well as the more conservative American group who remove ovarian tissue only when pathology is evidenced or in cases of malignancy regardless of age. We have had no cause to regret leaving ovarian tissue up to this time but we hastily admit an all too short post-operative interval for reliable conclusions.

In regard to the supra-cervical hysterectomies, I may explain that in cases of women under 38 with clean normal cervices, nullipara or multipara, we choose the procedure to salvage the secretory function of the cervical glands in order to assist in maintaining a normal moist vaginal mucosa that will retain its normal function. In cases of total hysterectomies in this young age group we have had some difficulty with vaginitis and dysparunia which we feel resulted from dryness. .

Our patient load at this institution is great and our attitude toward the patient is extremely conservative. Our patients are given every opportunity to avoid surgery and only after thorough work up and study is one subjected to laparotomy. A conservative attitude is maintained at all times and it is our ideal to do reconstructive surgery when possible and to remove or destroy organs or function as a last resort for the preservation of the patient.

The cases reported in this series were obtained from our records beginning about September 1, 1947, and ending September 1, 1949, completing two years of our gynecological surgical service. Every effort was made in each individual case to fit the surgical procedure to the requirements of the individual and the pathology presented by that individual.

There are several considerations of interest in this group of total hysterectomies. The 71 fibroids I feel is a rather high figure and we are somewhat amazed at this percentage. The 35 cases of pelvic inflammatory disease we feel is high when one considers 47 of this group were white individuals. On the contrary the 3 cases of endometriosis is certainly low in this age group. We were careful to include all obvious pathology and I do not feel that any sizeable number could have been missed. The low incidence of retroversion reported in

TOTAL HYSTERECTOMIES

		Average Age	Oldest	Youngest	Average No. Transfusions	Average Hospital Stay
Total Hysterectomy	White—12 Colored—6	34.94	46	21	1.16	12.00
Total Hysterectomy and Appendectomy	White—6 Colored—6	38.25	46	29	1.00	9.00
Total Hysterectomy and Bilateral Salpingo-Oophorectomy	White—14 Colored—26	39.25	51	25	1.85	11.95
Total Hysterectomy and Bilateral Salpingo-Oophorectomy and Appendectomy	White—6 Colored—11	45.37	52	32	1.50	10.25
Total Hysterectomy and Unilateral Salpingo-Oophorectomy	White—8 Colored—6	38.78	50	19	1.07	12.86
Total Hysterectomy and Unilateral Salpingo-Oophorectomy and Appendectomy	White—1 Colored—3	39.00	45	32	1.25	7.50
Total — 105	White—47	Colored—58				

Average number of pregnancies	2.72
Average number of blood transfusions	1.40
Average age	38.98
Average hospital stay	11.20

Cervicitis	62
Fibroids	71
Complete Prolapse	1
Bleeding	27
Malignancy (cervix)	2
Fibrosis Uteri	21
P. I. D.	35
Ovarian Cyst	25
Cervical Polyp	1
Endometriosis	3
Uterine Polyp	1
Chronic Appendicitis	27
Adenocarcinoma Uterus	1
Retroversion	1
Dermoid Cyst	1
Hyperplasia Endometrium	21

this entire survey is due to our failure to consider simpler or asymptomatic retroversion as a pathological condition justifying surgery. The 21 cases of hyperplastic endometrium I feel is exaggerated. It is my opinion that it would be best explainable on a basis of the injudicial use of estrogenic hormones.

In two patients included in this series of total hysterectomies we had postoperative evisceration. Whether this may be explainable on a basis of protein deficiency, avitaminosis or faulty technique, I am not in position to conclude.

Of interest in this group of supracervical hysterectomies we find a high percentage of fibroids with low incidence of bleeding. The two ectopic pregnancies and the one abdominal pregnancy reported in this group had involvement of the uterine cornu or the broad ligament to such an extent that it was more practical to remove the uterus than to speculate on the extensive bleeding that might have resulted or the leaving of a relatively or a vascular organ. Again we find the incidence of endometriosis far below what we would have expected.

There was one case of Porro's Cesarean section in this series. The one mortality occurring in our entire series was in the supracervical group, a colored female, age 27, who was operated with a hemoglobin of 60 per cent and expired the fifth postoperative day as a result of pulmonary embolus. I feel that we invite criticism with this case and are obviously at fault. We have a house ruling against any elective surgery on a patient with a hemoglobin of less than 75 per cent.

In considering the vaginal hysterectomies we

SUPRACERVICAL HYSTERECTOMIES

		Average Age	Oldest	Youngest	Average No. Transfusions	Average Hospital Stay
Supracervical Hysterectomy	White—6 Colored—12	34.55	56	17	0.22	10.33
Supracervical Hysterectomy and Appendectomy	White—4 Colored—9	34.15	42	26	0.23	7.76
Supracervical Hysterectomy and Bilateral Salpingo-Oophorectomy	White—1 Colored—16	35.82	50	22	0.70	11.35
Supracervical Hysterectomy and Bilateral Salpingo-Oophorectomy and Appendectomy	White—0 Colored—4	37.50	40	30	1.25	8.50
Supracervical Hysterectomy and Anterior and Posterior Colporrhaphy	White—1 Colored—0	28	38	38	2	15.00
Supracervical Hysterectomy and Unilateral Salpingo-Oophorectomy	White—2 Colored—10	35.00	42	25	0.25	9.50
Supracervical Hysterectomy and Unilateral Salpingo-Oophorectomy and Appendectomy	White—1 Colored—3	37.75	44	34	0.75	11.00
Total — 60	White—15	Colored—54				

Average number of pregnancies	1.23
Average number of blood transfusions	0.46
Average age	35.02
Average hospital stay	9.95

Chronic Cervicitis	8
Fibriods	48
Bleeding	10
Ectopic Pregnancy	2
Pseudohermorphroditism	1
Fibrosis Uteri	8
P. I. D.	24
Ovarian Cyst	10
Abdominal Pregnancy	1
Endometriosis	1
Uterine Polyp	1
Chronic Appendicitis	21

VAGINAL HYSTERECTOMIES

		Average Age	Oldest	Youngest	Average No. Transfusions	Average Hospital Stay
Vaginal Hysterectomy	White—0 Colored—1	35	35	35	0	9.00
Vaginal Hysterectomy and Anterior and Posterior Colporrhaphy	White—19 Colored—3	42.59	59	23	1.27	12.22
Vaginal Hysterectomy and Anterior Colporrhaphy	White—1 Colored—0	42	42	42	2	17.00
Vaginal Hysterectomy and Posterior Colporrhaphy	White—6 Colored—0	36.83	45	12	1.50	10.00
Total — 30	White—26	Colored—4				

Average number of pregnancies	5.70
Average number of blood transfusions	1.30
Average age	41.16
Average hospital stay	11.83

Chronic Cervicitis	26
Fibroids	4
Second Degree Prolapse	23
Complete Prolapse	5
Bleeding	19
Cystocele (symptomatic)	23
Rectocele	28
Fibrosis Uteri	3
P. I. D.	1
Ovarian Cyst	3
Endometriosis	1

find about what one would expect—some elements of prolapse in all of these cases with a correspondingly high incidence of cervicitis. Again the high incidence of bleeding is best explained by the promiscuous use of estrogenic hormones.

RADICAL HYSTERECTOMIES

		Average Age	Oldest	Youngest	Average No. Transfusions	Average Hospital Stay
Radical Hysterectomy and Bilateral Salpingo-Oophorectomy	White—0 Colored—1	41	41	41	3	27.00
Total — 1		Colored—1				

Bleeding	1
Adenocarcinoma of Uterus	1

The radical hysterectomy, using a modified Wertheim technique, was for an obvious carcinoma of the fundus. This particular case has made good progress to date.

SUMMARY OF ALL HYSTERECTOMIES REPORTED

Total	205
Oldest	59
Youngest	17
Average number of pregnancies	2.64
Average number of blood transfusions	1.07
Average age	37.98
Average hospital stay	10.95

In summary we report 205 hysterectomies at the South Mississippi Charity Hospital done by our visiting staff, resident staff and myself over a two-year period with one death. We can not feel that the choice of procedure was influenced by any factor other than the pathology presented by the patient. We do not feel that the average hospital stay of 10.5 days was influenced by any particular procedure. We must be frank to admit that the hospital stay would have been shortened to a seven-day average if we had facilities to expedite patient care approximating an ideal. For innumerable reasons many of our patients are kept two or three days preoperatively and again remain one or two days after discharge. We feel very positive that the use of whole blood has contributed greatly to our low mortality rate. This series of cases as reported has been the entire load of patients whose condition warranted hysterectomies and no patient was left off because her general condition would not permit the procedure. The average age incidence of 37.98 is relatively low but when we consider the number of fibroids and pelvic inflammatory disease occurring in our series, plus the percentage of negroes, plus a total average of 2.64 pregnancies per individual, one can readily appreciate the situation.

DR. PARKER HONORED

Dr. E. C. Parker, Gulfport physician, was honored recently by the Mississippi Coast Counties Medical Society for his fifty years service. The Gulfport physicians, members of the coast organization, complimented Dr. Parker with a dinner at the Great Southern Country Club at which remaining members of the society were guests. Climaxing the ceremonies was a presentation of a handsome gold watch to Dr. Parker by the Coast Counties Medical Society.

Dr. Parker was also welcomed into membership in the Mississippi State Medical Association's Fifty Year Club—composed of physicians who have practiced actively for half a century.

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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Editorials

STATE MEETING

The annual meeting of the state medical association at Jackson was one of the very best. The registration reached 434, with the presence of young doctors greatly in evidence. The fraternal interest was very fine.

President O'Mara's address on socialism displayed ability and courage. The plans and the aims of the incoming president, Dr. B. S. Guyton, created much favorable comment. The Doctor's Day luncheon under the able direction of Mrs. A. Street, the Auxiliary president, was well attended and the address of Dr. Ralph Gampbell on socialized medicine rocked the thinking of all present. The Fifty-Year Club, also well attended, heard Doctor Andy Hall, Mount Vernon, Illinois, deliver a stirring address on holding the professional advance. Dr. Seale Harris of Birmingham, member of the club, was greatly appreciated as a guest by the entire association and received the highest compliments on his new book, **Woman's Surgeon,** the life and work of Dr. Marion Sims.

The sections presented fine programs and were well attended. The American Academy of General Practice, under the leadership of Drs. Kety and Johnson, showed fine evidence of being on the up and up. Drs. Reinberger, Motley and (R. L.) Sanders were outstanding guest speakers.

The Past-Presidents Club was delightfully entertained by the Central Medical Society at breakfast and lunch.

The three vice-presidents elected are: Dr. S. B. McIlwain of Pascagoula, Dr. J. A. K. Birchett of Vicksburg, and Dr. L. L. McDougal of Tupelo. Associate editor, Dr. Harvey Johnston of Jackson; speaker, Dr. Stanley Hill of Corinth; and speaker emeritus, Dr. J. Rice Williams of Houston.

Councilors are: First District, C. W. Patterson of Rosedale; Second District, L. L. Minor of DeSoto County; Third District, M. Q. Ewing of Amory; Fourth District, Lamar Bailey of Kosciusko; Fifth District, H. C. Ricks of Jackson; Sixth District, Lamar Arrington of Meridian; Seventh District, T. E. Ross of Hattiesburg; Eighth District, A. V. Beacham of Magnolia; and Ninth District, E. C. Parker of Gulfport.

NEW PRESIDENT

Dr. James Grant Thompson, able in many ways for professional leadership, was elected president-elect. His diligence and fine work as historian have been an excellent proving ground for his task. Biloxi was elected as the next meeting place with the time changed to one week later than it has been its custom, now the third Tuesday in the month.

HOSPITALS

The Council on Medical Education and Hospitals of the American Medical Association has prepared a magnificent report in the May 6 issue of the **A.M.A. Journal**. Anyone who is interested in hospitals, and every doctor should be, would do well to read and study this report. It consists of 91 pages. Among interesting facts brought out in this report, we now have: 6,572 registered hospitals in the United States with a bed capacity of 1,439,030, in 1949, 16,659,973 patients were admitted; 2,820,791 babies were born in the hospitals last year, and the average daily patients were 1,224,951. The increase in number of patients over 1948 were 237,199. It was estimated that one patient was admitted every 1.9 seconds, one live baby born every 11.2 seconds. The general hospitals admitted 92.8 per cent, the psychiatric hospitals 1.8, tuberculosis senatoriao 7, other groups 4.7. Fifty-five per cent of the occupied beds are utilized for psychiatric care although they are furnishing only 1.8 per cent of the total patients.

The hospitals of the nation are now doing a great work in training nurses, technicians, interns and resident physicians as they treat the sick. The people are becoming more hospital minded all the time. This institution is the meeting place of the doctor and the sick patient to a greater degree every year.

Mississippi has in process of construction the most complete system of hospitals perhaps in the nation. The distribution of hospitals is of great importance. South Carolina has had a very good distribution of hospitals for many years. It has the lowest death rate for appendicitis of any state in the union. Nevada has the greatest number of beds per capita perhaps, but the highest death rate for appendicitis. Hospital service is well on its way to all the people, at least it is being made available.

Mississippi did have the lowest number of hospital beds per capita and the lowest occupancy. With the increased number of beds now on the way, this most likely will not be true very much longer. The per capita distribution of funds for the indigent sick gives Mississippi a fine foundation for the distribution of medical care. The zoning of this fund as a rule is not in keeping with the purpose of this plan. This fund is especially for the urgently sick patient who needs to enter a hospital at once and who has no means. The doctor rendering the service is not to charge the patient for service. It is a just and fair and democratic plan.

It is important to have hospital beds but more important to have competent doctors, nurses et al to take care of them, and perhaps most important for the patient to be able to enter the hospital as soon as the need occurs as in acute appendicitis, intestinal obstruction, eclampsia, injuries in the home, on the highway, and in the fields. The charity fund in Mississippi is a great aid in this respect, but it reaches only a limited number. Prepaid insurance seems to be the answer for the middle classes. The Blue Cross is a fine company, and no doubt the most preferred. There is a demand on the part of many people to have a more complete coverage. The Blue Cross now has 39 million in the nation, with Mississippi claiming 70 thousand of these. Hospitals as a rule are just as good as the doctors behind them. The aim for our state and nation should be better hospital service for the people for less cost if possible. Prepaid voluntary insurance is of the very greatest importance. It will help to keep medicine free from regimentation. Free medicine thinks farther and deeper and broader. It is now giving the best medical service in the world.

News and Comment

NEW JOURNALS

At hand in April is GP, a well-gotten up monthly, the first issue of a new journal published by the American Academy of General Practice. Its first editorial quotes one of the founders of the Academy, Dr. Ian Stevessos, writing on the general practitioner:

> "The public today tends to regard him as the admirable menial of the profession, the genial and beloved drudge who may be roused in the middle of the night to allay some trivial anxiety but who is hardly to be trusted with a serious disease."

The Academy is a comparatively new organization, some of the moving spirits of which are native sons of the South. The Southern Medical Association recognized general practice in 1941, when a Section on General Practice was organized. Several years later the American Medical Association created its Section on General Practice. The American Academy of General Practice was founded in 1947.

Dr. Walter C. Alvarez, formerly professor of medicine of the Mayo Foundation, is editor-in-chief of GP. His keen grasp of therapeutic essentials, and flair for writing should keep the journal alive and entertaining.

Other new periodicals of the last few months include the **United States Armed Forces Medical Journal,** published in Washington, D. C.

Angiology, the Journal of Vascular Disease, sent out its first number in February of this year, its editor-in-chief Dr. Saul Samuels of New York. Among the associate editors are Dr. Alton Ochsner of New Orleans and Dr. Keith S. Grimson of Durham.

The official organ of the American Heart Association is now called **Circulation,** and its first number appeared at the beginning of the current year. Its editor-in-chief is Dr. Thomas M. McMillen of Philadelphia.

A few months older is the **American Practitioner and Digest of Treatment,** editor-in-chief of which is Dr. John B. Youmans, dean of Vanderbilt University School of Medicine in Nashville. Assistant editor is Rudolph H. Kampmeier, also of Vanderbilt.

A new publication put out first in January of 1950 by the American Medical Association is the **Archives of Industrial Hygiene and Occupational Medicine.**

—Southern Medical Journal

DEATHS

DR. E. M. GIVENS

Funeral services were held at the Summit Methodist Church for Dr. E. M. Givens, 70, of that city on April 3, with Rev. L. P. Anders, pastor, and Rev. Roe Wilson, pastor, Summit's Baptist Church assisting. Burial was in Woodlawn cemetery, Summit.

Born in Lawrence County, he practiced medicine for 17 years in Monticello and vicinity, and 25 years in Summit and McComb, with offices in McComb for a long period. One of Pike County's best known physicians, he was esteemed as a counselor and friend to many people in many walks of life. Dr. Givens died in a McComb hospital April 2. Although his health had not been good for several years past, death resultetd from a sudden attack suffered the day before.

He leaves his wife Mrs. Myra Felder Givens, a daughter, Mrs. John Enos Mercier, both of Summit; a son, E. M. Givens, Jr., Jackson; a brother, Tommy Givens, Monticello; two sisters, Mrs. Hugh Felder, Summit, and Mrs. Tom Rollins, Foxworth.

DR. A. H. McGREGER

Many people were deeply shocked and their hearts saddened when news spread that Dr. McGreger had died at Randolph. For 50 years he had served the people of his community as family physician, as counselor in personal and religious matters and as a friend. He was dearly loved by everyone.

Addley Harrison McGreger was a native of Pontotoc County, was born at Springville November 9, 1876. He attended public schools of this county and graduated from the Memphis Hospital Medical College at Memphis, beginning the practice of medicine at Randolph about 1900.

In 1901 he was married to Miss Carrie Collums, who survives him. He leaves three daughters and four sons: Mrs. Albert Sledge, of Randolph, Mrs. Eudene Tutor, Pontotoc, Mrs. Henderson McCain, Memphis, Shelton, Quay, Max and Brooks McGreger, all of Randolph. He is also survived by two sisters and a brother, Mrs. Mault Collums, Springville, Mrs. Mary Fooshee, of Oxford, and Joe McGreger, Randolph.

DR. Z. C. HAGAN

Dr. Zeffa Carl Hagan passed away at his home in Union on March 21, 1950. Although Dr. Hagan had been ill for about three years, he had been up and about during the day. Most of his seventy years had been spent in Union, except while he was away in medical school, and the time he served as a medical officer in the First World War.

Dr. Hagan was married some forty years ago to Miss Terry Carleton of Decatur, who preceded him in death by less than a year.

He is survived by one daughter, Nancy Carleton Hagan; three sisters, Mrs. Clora Gibson, Mrs. Pearl Cooper, and Mrs. Frank Nicholson; one brother, Romney Hagan, and many nieces and nephews.

DR. C. A. BARKLEY

Dr. C. A. Barkley, 59, who had practiced his profession for over thirty years at State Line, Mississippi, passed away on March 7, in a Laurel hospital from a heart attack.

Dr. Barkley was born near Sandersville, Miss., and his family later moved to Prentiss, Miss., where he received his high school education. He received his education in medicine from Emory University in Atlanta, Georgia.

He was a veteran of World War I, serving as captain and was wounded and gassed.

Surviving him are his wife and two daughters, Mrs. W. B. Robertson, of Pascagoula, Miss., and Mrs. R. B. Perry, of Perkinston, Miss. and five grand children. Also surviving are a brother, Dr. M. H. Barkley, dentist, of Waynesboro, Miss., three sisters Mrs. B. F. Parker and Mrs. B. B. Koen, of Foxworth, Miss., and Mrs. Julia Daniels, of Washington, D. C.

DR. W. H. MARS

Dr. William Henry Mars, one of Neshoba County's most prominent citizens and philanthropists, passed away at the family home in Philadelphia February 21 after a prolonged illness. Dr. Mars was 83 years of age and was a native of the county.

The son of the late James Henry Mars and Mrs. Martha Jane Deweese Mars, Dr. Mars was born in the Custusha community. Attending the rural schools of his community, he later attended Cooper's Institute, Daleville, and Nashville, where he graduated in 1890.

Interested in the farming, Dr. Mars acquired large holdings in Neshoba, Kemper and Winston counties and was one of the largest land owners in this section of the state. He also owned considerable property in Philadelphia. He was the last living member of the original board of directors of the Citizens Bank. He was known far and wide for his philanthropic interests.

Dr. Mars was preceded in death a number of years ago by his wife, Mrs. Florence Latimer Mars, one of the city's most beloved.

He is survived by a daughter, Mrs. J. T. Dees, a son, William F. Mars and three grandchildren, Miss Florence Mars and Mont and Martha Latimer Mars. He is also survived by two sisters, Mrs. H. L. Austin and Miss Ida Sue Mars of Jackson and a number of nephews and nieces, including Henry Mars and Norman C. Mars and Mrs. John E. Land, Philadelphia.

DR. JOHN D. NEEL

Dr. John D. Neel, who served Pontotoc County for more than 60 years as a practicing physician, died March 10 at his home. He was 92.

Dr. Neel was a lifelong resident of Pontotoc County, and widely known throughout this section of Mississippi. After graduation from the old Memphis Hospital Medical College he returned to his home county to begin practice. He retired about a year ago. He was a Mason, and a member of the Ecru Baptist Church.

DR. J. P. HITT

Dr. James Peter Hitt who retired about two years ago after 57 years of caring for the ills of Tunica Countians died March 12 at his home in Tunica.

Dr. Hitt was born in New Albany. He was educated at Blue Mountain high school and was graduated from old Memphis College of Medicine. Dr. Hitt began his long career of serving ailing humanity at Holly Springs but within a short time moved to Tunica.

In failing health for several years, Dr. Hitt retired two years ago. He was honored at special services at the Tunica Baptist Church in September 1948 by hundreds of friends and patients who gathered to pay tribute to the long years of service by the doctor.

The beloved doctor was a member of the Baptist Church, charter member of the Sixth District Medical Association, of which he was past president, and also a member of the American Medical Association.

Dr. Hitt was a member of the Fifty-Year Club, a statewide group composed of physicians who have practiced their profession for fifty years.

Surviving are his wife, Mrs. Mary T. Hitt; a son, James P. Hitt, Jr., of Memphis; three brothers, R. W. Hitt, New Albany; C. K. Hitt, San Angelo, Texas, and Emory Hitt of Oklahoma; two sisters, Mrs. Sibbie Wilkins of Tunica, and Mrs. Allie Bevell, New Albany.

IN MEMORIAM OF DR. FRANK C. SPALDING

In the recent death of Dr. F. C. Spalding, the Clay County Medical Society has lost another of its members, and a man who measured up to the highest standards of the profession to which he devoted more than 48 years of his useful and unselfish life. This society deeply feels the loss of the late Dr. Spalding, a native son of Clay County who exemplified the standards and ideals of the medical profession with his untiring devotion to the tasks at hand. A charter member of the local Medical Society, Dr. Spalding was loved and admired for his professional and personal attributes in this county. He contributed a long, honored and useful career both as a citizen and in his chosen profession. He wore a crown of efficiency for thoroughness in his professional work, his unquestioned integrity, his simplicity and nobleness of character and his extreme loyalty to his family, fellow physicians, friends and patients.

Both as a man and as a physician, Frank, as he was known by his most intimate friends, was a rugged individualist, always ethical and a perfectionist in his chosen field of endeavor. He was studious and well read. Often he spent long hours delving into his medical books searching for a "something better" for his patients. He was the owner of a fine medical library and it is of passing interest to note that he possessed some rare volumes, inherited from his grandfather Dr. W. T. Spalding. Among these works were three volumes, titled "Encyclopedia of Practical Medicine" which was published in 1849. This latter book was autographed by the renowned T. H. Mayo, M.D., of Philadelphia in 1877. He was a good doctor, with an extensive practice, and his mere presence was a source of inspiration to his friends. He was constantly encouraging and consoling to all who came to him for help. He contributed much to charity, giving his services freely to the poor and the under privileged. He and his services will be greatly missed in this community. His life was an inspiration and a benediction to his legions of friends and admirers.

Dr. Spalding, a member of the Christian Church, was a devout Christian who exemplified the principles of the church by acts and by faith. He was always on the side of right rather than might, regardless of the opinion of others. The proposition of belonging to a minority group in his beliefs did not concern him if he thought he was right. He was a "pillar" of the church to which he belonged and this church never had a more consecrated or devoted member. His christian faith, character and his reputation is worthy of emulation. His earthly labors have ended but his noble work will bear fruit for many years to come. A fitting epitaph for Dr. Spalding would be "these who knew him best like him best."

Dr. Spalding was born in West Point, Clay County, Mississippi, on June 20, 1877 where he spent the early part of his life. After receiving his early education at the old "Goat Hill" academy and public school and at the school in Huntsville, Alabama, Dr. Spalding took his pre-medical training at the Mississippi Agricultural and Mechanical College at Starkville, Mississippi. He was graduated from the old Memphis Medical College in 1901 after having passed the Mississippi State Medical Board examination in 1900, a year previous to his graduation in medicine. His internship was served at the Charity Hospital in Vicksburg, Mississippi. He continued his medical studies throughout his career, studying diseases of the skin and diseases of children at Chicago, Illinois, St. Louis, Missouri, and Saluda, North Carolina and at post-graduate medical schools and specialized seminars.

Dr. Spalding served Clay County, as a physician from 1916 until his death in his office, December 16, 1949. Prior to that time he had practiced medicine in Artesia, Malvina, Benoit, Gunnison, Crawford and Meridian, Mississippi. While practicing at Meridian he also served as City Health Officer. He served for a number of years as Clay County Health Officer, in addition to his private practice in West Point.

On December 17, 1902, he married Miss Sarah Jordon of Columbus, Mississippi. To this union were born two children; F. C. Spalding, Jr., who died in 1925 and Sarah Frances Spalding, the present Mrs. T. J. Tubb of West Point, Mississippi.

He was a member of the Christian Church, a Mason, Knights of Pythias, Clay County, Northeast Mississippi, and American Medical Association. He served as president of local Medical Society in recent years.

In memoriam of Dr. Frank C. Spalding, the Clay County Medical Society offers the following resolutions:

WHEREAS, this Society, by the recent death of Doctor Frank C. Spalding, has suffered the loss of another of its members who, throughout a most useful and successful career of more than forty-eight continuous years of unselfish service to his fellow man, constantly exemplified the highest standards and ideals of the medical profession; and

WHEREAS, "Frank," as he was affectionately known to the members of this Society and to a multitude of friends in his native Clay County and throughout the state, was universally admired by his fellowmen—professional and otherwise—for his professional skill and knowledge, his fidelity and integrity, his cheerful, friendly, charitable nature, and his Christian character, that his passing occasions a widespread feeling of distinct loss and sorrow to this Society and this community;

NOW, THEREFORE, BE IT RESOLVED, that the Clay County Medical Society does hereby recognize and record its loss in the passing of Doctor Frank C. Spalding and its appreciation of his fine contributions to this Society and to mankind;

BE IT FURTHER RESOLVED, that this Society hereby extends and tenders its condolences and sincere sympathy to the family and loved ones and to the many friends of Doctor Frank C. Spalding;

BE IT ALSO RESOLVED, that this resolution be recorded in the permanent records of this Society and of the Northeast Mississippi Medical Society, that a copy thereof be sent to the family of Doctor Frank C. Spalding, and that a copy be sent to the *Mississippi Doctor* and to the local newspaper for publication.

Interpreting Medical Literature

Staff of Review

Dermatology—James G. Thompson, Jackson

Otolaryngology—Charles R. Hume

Ophthalmology—Edley Jones, Vicksburg

Obstetrics and Gynecology—J. F. Lucas, Greenwood.

Orthopedics—Thomas H. Blake, Jackson

Public Health—Felix J. Underwood, Jackson

Pediatrics—Harvey F. Garrison, Jackson

Radiology and Roentgenology—Karl O. Stingily, Meridian.

Pathology—R. M. Moore, Vicksburg

Surgery—W. H. Parsons, Vicksburg

Urology—Temple Ainsworth, Jackson

PEDIATRICS

PERTUSSIS TREATED WITH CHLORAMPHENICOL, Eugene H. Payne, Parke-Davis and Co., Detroit, Mich., and Miguel Levy, Gaston Moscoso Zamora, Moises Sejas Vilarroel, and Eduardo Azbalaga Canelas, Cochabamba, Bolivar, J.A.M.A. 141:1298-99, Dec. 31, 1949.

"Experience is summarized with chloramphenicol (chloromycetin) in the treatment of 48 cases of pertussis during a severe epidemic from July to October 1949 in Bolivia. Pertussis in this region is of high virulence, with a death rate among children said to be double that encountered in North America. In each case the diagnosis was confirmed by cough plate or swab cultures.

"The drug was given in varying doses, depending on the weight of the child. It was administered by mouth in most cases, but at times was given as a rectal suppository or intravenously when dissolved in propylene glycol. The first initial dose was 0.25 Gm. as a rule, regardless of age. Maintenance doses of 0.125 to 0.25 Gm. were then given, two to four times a day, until a total of 1.75 to 4.00 Gm. was reached. Fever, when present, disappeared during the second day of treatment. A decrease in the number of paroxysms could usually be observed by the third day. The paroxysms disappeared completely by the third to sixth day after treatment was begun. A light cough, thought to be due to residual inflammation in the tissues, often persisted for a few days thereafter. One case had a relapse of short duration a few days after treatment was discontinued. Spot check of patients by cough plate one week after treatment indicated that all were free of infection. A few children under 6 months of age had mild symptoms of nausea. These had received the drug mixed with substances such as honey or orange juice, instead of in capsule form.

"It was concluded that chloramphenicol (chloromycetin) is an effective agent for the treatment of pertussis. When given as a rectal suppository or intravenously, the results are equal to those with oral medication. Untoward reactions were negligible."

COMMENT: It has been my privilege to have had some experience in the treatment of whooping cough with both aureomycin and chloromycetin. In my opinion, chloromycetin is much more valuable in the treatment of whooping cough than aureomycin; however on account of the very disagreeable taste of chloromycetin, it is very difficult to give by mouth. It can be easily given per rectum as indicated in this article, but it is not quite as effective as it would be by mouth. In this connection, however, allow me to say that but for the excessive expense of the treatment, the addition of hyperpertussia serum along at the same time with the chloromycetin is by far the most valuable treatment for active whooping cough. But for the expense of the hyperpertussis serum, we could very well give this every day for anywhere from 3 to 5 or 6 days.

VA PATHOLOGY
PRESENTATION OF CASE

First Admission: A 57-year old colored man was admitted on 4-11-49 to the VA Hospital, Jackson, Miss., complaining for 2 weeks of joint pains, headache, epistaxis, edema of face, and oliguria followed an attack of sore throat. He had also upper abdominal pain relieved by milk and exertional dyspnea with chest pain. Treatment consisted of sulfa drugs and digitalis.

Examination: Obese, acutely ill pt.; Temp.

101.8°; pulse 110; BP 160/80. Heart regular, not enlarged by percussion; first sound reduplicated; Grade II systolic murmur. Tenderness in RUQ; liver not palpable. No pain or swelling in hip or other joints. Ankle edema 2 plus.

Laboratory: Urine: Albumen 2-; 10-20 WBC/HPF, few granular casts; maximum concentration 1.013. CBC: 19,000 WBC; P. 82; L. 18; Hb. 12 gms. Sed rate 32. **Chemistry:** BUN 46.8; Creatinine 2.6; Sugar 100. Kahn negative. Blood cultures negative. **X-rays:** Cardiac enlargement. **EKG:** Digitalis and hypertension changes. **One week later:** WBC 11,500. BUN. IVP negative. Intravenous PSP: 15%. Urethrogram: Stricture of distal urethra.

Course: Under salicylate therapy temperature returned to normal in 10 days. Blood pressure varied from 126/70 to 170/90. Pt. left AMA 20 days after admission.

Second Admission: Pt. was readmitted 11-21-49 at 2:15 a.m. with a history of severe abdominal pain of 18 hours' duration. The onset of pain had been gradual, cramping with vomiting, and was located in the epigastrium, radiating to the back and right leg.

Examination: Acutely ill pt., perspiring freely; T. 101°; P. 100; R. 30; BP 160/100. Heart enlarged; Grade II systolic murmur at apex; no reduplication of sounds. Lungs clear. Abdomen obese, distended, tender, but not rigid; peristalsis present. Rectal examination negative.

Laboratory: Urine: Sp. Gr. 1.015, Albumen trace, 5-8 WBC/HPF. 14.5 gms; WBC 18,800; P. 75, Band 13, L. 12. **Chemistry:** BUN 23; NACI 525; CO 2 46%; **X-ray** of abdomen; no dilated loops of bowel, no abnormal gas distribution, no fluid levels and no air beneath diaphragms. **EKG:** Hypertension effect.

Course: Pt. received ¼ gr. morphine and slept quietly for four hours. At 6:30 a.m. pt. complained of feeling very sick with epigastric pain and distention; BP 110/80. At 8:00 a.m. another ¼ gr. of morphine was given. Pt. remained nauseated but did not vomit throughout the morning. A questionable diastolic murmur at apex and friction rub over the precordium was then heard. There was increased dullness over bladder area but on catheterizing only a few cc. of urine were obtained. During the day he went into a more profound shock and was placed on penicillin and Wangensteen suction which yielded copious amounts of coffee-colored material. 1,000 cc. of 5% glucose was started intravenously at 4:30 p.m. At 5 p.m. pt. became dyspneic and expired at 5:15 p.m. —15 hours after admission.

Abstract of Discussion

The x-ray films of the second admission interpreted by Dr. J. W. Evans showed cardiac enlargement, diffuse abdominal shadow and elevation of diaphragm suggestive of exudate and moulding of transverse colon, possibly due to a mass. Differentiating between perforated viscus, biliary or renal colic, appendicitis, pancreatitis, and dissecting aneurysm, Dr. B. S. Oxman preferred the diagnosis of acute pancreatitis due to severe upper abdominal pain and mass (suggested by x-ray), shock, and rapid fatal outcome. Dr. J. V. Crockrell could not rule out perforated duodenal ulcer indicated by the previous history of pain and by coffee-colored stomach content. Dr. L. Elson concurred with this diagnosis, but considered also dissecting aneurysm which would explain the rapid death by massive hemorrhage. Dr. K. R. Grigsby thought that absence of rigidity would speak against perforated ulcer.

Anatomical Diagnoses

(Dr. H. N. Naumann)

1. Acute hemorrhagic pancreatitis; peritoneal fat necrosis and exudate; retroperitoneal hemorrhages.
2. Parenchymatous degeneration, kidneys, adrenals, liver.
3. Cholecystitis and cholelithiasis.
4. Prostatitis, acute.
5. Cardiac hypertrophy, marked.
6. Arteriosclerosis, generalized, moderate.
7. Obesity.

Postmortem chemistry in spinal fluid: Amylase 527 units.

Faith is the foundation on which the West was built—as the East had been built before it. Faith in God and the right, in people and work and prayer. This is the true source of a nation's greatness.

Every church spire pointing heavenward blazens the secret of our country's strength.

State Board of Health

Felix J. Underwood, M.D.

PUBLIC HEALTH ASPECTS OF ATOMIC ENERGY (Concluded)

ROY J. MORTON
Leader, Waste Disposal Research Section
Health Physics Division
Oak Ridge National Laboratory
Oak Ridge, Tennessee

Problems of Radioactive Waste Disposal

The rise of nuclear fission as an industry has been both spectacular and rapid. In the space of a few short years we have witnessed the birth of an industry so new, so large, and so unique that it is a little diiffcult to comprehend. Of the environmental problems presented by atomic energy developments, an outstanding one is that of waste disposal. It has become almost axiomatic that an industry, like a community, can have a healthy program only so long as it can adequately dispose of its own waste products. The production, processing, and use of radioactive materials may produce liquid, solid, or gaseous wastes. These wastes vary widely in composition and in the kinds and amounts of radioactivity in the materials they contain. Some may contain toxic chemical substances but as a rule the essential problem is to reduce the radioactivity to negligible amounts before the wastes are disposed of into the air, water, or soil.

The ideal objective would be to retain absolute control of all radioactive wastes and prevent any increase in the natural background of radioactivity. This can be accomplished only by extremely costly methods, if at all, and is practically impossible for an expanding permanent program of atomic energy development. The minimum objective, therefore, is that the radioactive isotopes released into drainage systems, the atmosphere, or soils must be incapable of sufficient concentration in air, water, food, or drugs to be harmful to man or to plant and animal life.

With regard to atmospheric contamination an air cooled pile such as the one at Oak Ridge National Laboratory causes induced activity in the air and any dust contained in the cooling air stream. Radioargon is the principal radioisotope discharged into the air. Since it is not selectively absorbed into the body it presents a minimum hazard and is disposed of from tall stacks which give an adequate dilution factor. The radioactive dust is removed by the use of filters. Air samples and other measurements are taken very frequently or continuously in the neighborhood of the pile to insure that its operation is maintained safely at all times.

Problems of air contamination are presented by chemical operations during solution, separation, and purification of the irradiated materials; and are also the concern of the thousands of users of the isotopes which are sent out from Oak Ridge or produced at accelerator installations. The most successful method of control is to confine the contamination as much as possible and remove the contaminants from the smallest possible volumes of air near the source. This requires especially designed hoods which contain their own filters, air washers, precipitators, and such. This air is then collected through a central filter system and passed up a stack of suitable height. Other points to observe are that hood surfaces which may be exposed to radioactive substances must be of a material that can be decontaminated readily; parts must be removable for replacement; air samples must be taken inside and outside of laboratories that use large quantities of radioactive materials, as in chemical processing; and the utmost care in techniques must be taken to avoid spilling or the careless disposal of radioactive materials into ordinary laboratory sinks.

In the case of radioactive solid wastes useful material and equipment may be decontaminated and reclaimed. Contaminated clothing is laundered and tested before reuse. Worthless solid materials and equipment that cannot be decontaminated are buried in carefully selected burial grounds which are permanently fenced and restricted and which are monitored regularly. Earth cover usually assures adequate shielding but concrete cover may be used if necessary. It is essential that burial areas should be selected and tested to assure that there will be no dangerous leaching of radioactive materials underground and that the areas will be under permanent control. Some have suggested that radioactive waste materials be encased in large steel drums and disposed of by dumping to the bottom of the sea many miles offshore. Special research is being conducted on incineration and other methods of concentrating solid wastes such as contaminated trash and biological specimens in order to reduce the volume which must be buried. In this as in other forms of radioactive wastes it must be remembered that radioactivity cannot be neutralized or destroyed by any known artificial process. Radioactive materials can be concentrated or diluted but the rate of disintegration cannot be speeded up or retarded and is eliminated only by processes of natural decay which for different radioisotopes may require days, months, or thousands of years.

Liquid wastes are produced in some quantity wherever radioactive materials are produced, processed, and purified or where used as in hospitals and research laboratories. Therefore the disposal of radioactive liquid wastes is a major problem throughout the atomic energy field of activities and one which must be met at all research and production areas. The magnitude of the problem varies greatly depending upon the location and the types of institution. Work done at hospitals, universities, industrial laboratories, and other non-AEC facilities usually involves the use of only very small quantities of radioisotopes. At the national laboratories such as the ORNL where research and development include pilot scale studies and some production much larger quantities of radioactive wastes may be expected. The greatest volumes of liquid radioactive wastes result at certain types of large production plants such as the Hanford Works at Richland, Washington.

The possibilities for disposal of liquid radioactive wastes include concentration as by evaporation or chemical treatment followed by permanent storage for the long-lived materials; storage for a period of weeks or months for the short-lived materials to allow radioactive decay; or dilution through dispersal in surface waters. In considering methods of disposal of individual radioisotopes or mixed materials, the differences in their properties must be taken into account. Physical properties include the types of radiation, the energies involved, and the half-lives or radioactive decay constants. Chemical properties influence the action of ingested radioisotopes on persons or animals—solubility and efficiency of absorption in the body, concentration in particular organs or tissues, and rate of elimination from the body. Many of the long-lived radioisotopes tend to be absorbed and concentrated on clay particles; and also in the bodies of living organisms such as algae or aquatic plants and animals. Of special interest is the solubility of particular isotopes in water and the efficiency of their removal by water purification plants. It is also of interest to learn the extent to which various radioactive materials may be absorbed and concentrated by slimes and organic matter in drainage systems or sewage disposal plants.

It is apparent that the disposal of radioactive wastes presents difficult problems similar to the disposal of chemical wastes but complicated by the peculiar properties and hazards of the radioisotopes that may be present. The only logical approach has been and must continue to be through an adequate program of research and practical studies. Such waste disposal studies must be developed along broad lines. In addition to physics and chemistry, they involve a basic sanitary engineering approach and various collateral fields such as meteorology, geology, and biology.

The broad public health implications of the problems of radioactive wastes have received definite attention and a considerable number of sanitary engineers have been employed or have been assigned by other agencies to work on these problems. Several programs for this purpose have been established including that of the Waste Disposal Research Section in the Oak Ridge National Laboratory, study programs on waste disposal being conducted at other AEC sites, and a number of research projects in universities. Active work in the analysis and codification of available knowledge on waste disposal is being done by a special subcommittee of the National Committee on Radiation Protection. This subcommittee is giving particular attention to the problems of research institutions, hospitals, and other off-project users of radioisotopes.

Waste Disposal Research Program of Health Physics Division

The Waste Disposal Research Section in the Health Physics Division, ORNL, was organized July 1, 1948. Prior to that time the need for a broad program of fundamental and practical studies of radioactive wastes to consider both local and general problems and with a basic sanitary engineering approach had been emphasized and preliminary steps had been taken toward its establishment. This is a cooperative project in which the participating agencies are ORNL, the USPHS, TVA, and the Oak Ridge office of the AEC. Very recently practically all of our program has been declared an unclassified area of research so that with few exceptions we shall be permitted to publish whatever information we may obtain.

The broad purpose of the program is, through fundamental and practical studies, (1) to evaluate the hazards incidental to the release of radioactive materials into the atmosphere, ground waters, and waste drainage systems; (2) to study the factors that influence the extent and significance of such hazards; and (3) to aid in the development of effective and economical measures for their prevention and control under conditions of either peace or war.

The importance of the concentration and the retention of wastes at the source is recognized and at ORNL the Technical Division conducts research and develops methods for this purpose. The Healthy Physics Division is responsible for the study of those wastes that must be discarded or which escape after treatment within the plant. Certain types of studies are made directly by the Health Physics group. The program is also coordinated with special meteorological, geological, and biological studies that are being conducted in the Oak Ridge area. Personnel of the Section—employed by the Laboratory or on loan from cooperating agencies—now includes four senior personnel (sanitary engineers and sanitary chemists), seven junior scientific personnel, a laboratory technician, and a secretary.

The study program comprises three general areas of study: (1) survey studies; (2) process studies; and (3) corollary studies.

Survey Studies. Field sampling projects include the collection and assay of a variety of aquatic and other specimens which may indicate the dispersion and behavior of radioactive materials in the natural environment. Hydraulic and hydrologic data are analyzed to define the conditions of dilution and diffusion in surface water. Experiments on the controlled exposure of fish and algae in contaminated water are planned. Through these studies we hope to define the situation in the vicinity of Oak Ridge and, by extrapolation, elsewhere, with special reference to the travel of released materials, concentration in mud, algae, fish, and other substances, and the possible human exposures to radioactivity that may result.

Process Studies. This category includes laboratory and pilot plant studies on water, sewage, and industrial waste treatment processes which are well-established and provide a logical starting point for development of liquid wastes decontamination methods. This work is of public health significance in that it will enable us to determine the effects of radioactive materials upon sanitary engineering works and processes. As a corollary objective we will determine the effectiveness of these processes as waste treatment procedures.

Corollary Studies. These include work to improve field instrumentation and laboratory techniques as well as cooperative efforts in conjunction with the TVA and with the geological, meteorological, and ecological study programs mentioned previously. Special projects are: the development of surface water survey instruments for the scanning of water and mud for evidence of radioactivity; and a setup for continuous water and waste monitoring by conventional instruments at White Oak Dam which is located a short distance below the ORNL area.

Conclusion

No one can foresee at present the full extent or direction of atomic energy development in the future. As is often the case with new and important discoveries, there has been a tendency to over-publicize and to exaggerate both the promise and the hazards of operations in this field. The logical objective is to deal with the health and sanitation problems as they now exist, to study and learn more of the fundamental factors involved, and to develop rational systems of controls that are as conservative and adaptable as possible. The importance of fundamental research and developmental study programs is emphasized constantly and a large part of the present efforts in connection with atomic energy projects is devoted to research.

It is sometimes difficult to judge, at a given time, how much progress actually is being made. The idea that I should like to convey is one of optimism. Given a little time, these problems will be resolved just as others have been in the past. If you will recall, chlorination of water was practiced for many years before we really understood the fundamental mechanism involved. In the present instance, we may be confident that understanding will proceed more rapidly, because everyone concerned is very conscious of the problems involved, and a concerted effort is being made to solve them.

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STATE MEETING RECORD EVENT

With a registration of 164 members of the Auxiliary to the Mississippi State Medical Association attending the business sessions, and a registration of more than 500 present for the luncheons, including husbands as guests, the 1950 meeting, superbly presided over by Mrs. Augustus Street of Vicksburg, was one of the most successful in the twenty-seven years of the organization.

Reports revealed growth in membership during the past year, increased activity in both state and national objectives, with one major goal attained—the four-year medical college.

The new comittees were approved, one for budget and one for a nurse recruitment training program, the latter being an important undertaking for the coming year. Dues were advanced from twenty-five cents to one dollar.

Emphasis will be given in the coming year to solving problems attendant to the chronically ill and the indigent aged, and to the nurse recruitment and training program. In the latter a goal will be set to get a standard by which both white and Negro practical nurses may render more and better nursing service. The national campaign for voluntary health insurance as opposed to compulsory insurance will continue a major objective.

The state total membership was announced as 617.

DR. GAMPBELL AND MRS. HEROLD SPEAKERS

Highlights of the 1950 state sessions were Dr. Ralph Jocelyn Gampbell's entertaining and persuasive picture of the socialized state in Britain, his native land which he forsook to come to America. Doctors were guests of the wives on his occasion.

Mrs. Arthur A. Herold of Shreveport, La., incoming national president, addressed the group at the second-day luncheon. Her message emphasized in a workable and challenging way the twelve-point program suggested by A.M.A. for defeating compulsory health insurance schemes in our national government.

MRS. GEORGE OWEN NEW PRESIDENT-ELECT

At the second-day session of the state meeting Mrs. W. H. Anderson was presented the gavel by outgoing president, Mrs. Augustus Street, and the following new officers assumed their places on the executive board for the coming year: Mrs. George Owen, Jackson, president-elect; Mrs. Augustus Street, Vicksburg, first vice-president; Mrs. T. A. Baines, Jackson, second vice-president; Mrs. John B. Howell, Jr., Canton, third vice-president; Mrs. A. E. Brown, Columbus, recording secretary; Mrs. J. D. Simmons, Cleveland, treasurer; Mrs. Harvey Garrison, Sr., History and Archives; Mrs. R. C. Eley, Moss Point, parliamentarian; Mrs. John B. Howell, Sr., Canton, Research and Romance of Medicine; Mrs. Willard L. Waldron, Jackson, public relations; Mrs. Gilruth Darrington, Yazoo City, legislation; Mrs. L. J. Clark, Vicksburg, Doctor's Day; Mrs. Henry Boswell, Preventorium; Mrs. Stanley Hill, Corinth, corresponding secretary; Mrs. Richard Clark, Hattiesburg, "Today's Health"; Mrs. J. K. Avent, Grenada, nurse recruitment.

DELEGATES TO A.M.A.

The following were elected as delegates to the American Medical Association in San Francisco, June 26-30: Mrs. Augustus Street of Vicksburg, Mrs. R. C. Eley of Moss Point, Mrs. Leonard Posey, Jr., Mrs. T. W. Kemmerer, Mrs. George Owen, and Mrs. T. A. Baines, all of Jackson. Alternates were named as follows: Mrs. Eldon Bolton, Mrs. L. G. Horn, and Mrs. P. R. Reaves, of Jackson.

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*This directory is very incomplete. We are endeavoring to make it informative and up to date. Please advise the editor of additions and changes.

Some Practical Questions in the Diagnosis and Treatment of Diabetes Mellitus[*]

HENRY J. JOHN, M.D.
Cleveland, Ohio

DIABETES is probably as old as the human race. The symptoms of this disease were described long before the time of Moses, but there was no understanding of its cause and no rational treatment for it until the nineteenth century. Then the discovery was made that the pancreas was the organ involved in the condition, and dietary treatment was introduced in the attempt to control it. Actually, in severe cases of diabetes, the diet had to be so rigid as to mean slow starvation. No real progress was made in the conquest of diabetes until 1921, when insulin was discovered.

In 1922, when a group of clinicians began to use insulin, a new era for diabetics began. Now, with insulin available for all diabetic patients, we no longer see the "living skeletons" of the preinsulin era, hugging the radiator for warmth and dreaming about the food they could not eat if they wished to stay alive. No physician who dealt with those patients and no patient who endured that hardship can ever cease to marvel at the contrast that Banting's discovery brought into the lives of these people with diabetes. Now they are active, well nourished, competent men and women who can compete successfully with non-diabetics in the daily struggle for existence. Furthermore, they lead normal lives in every respect, have children and are successful in their occupations or vocations.

It is estimated that there are about two million diabetics in this country. Hence diabetes as a medical problem concerns not only the specialist, but also the practitioner of general medicine, for the majority of diabetic patients come under the care of the latter group.

Diabetes in Relation to Age.—The incidence of diabetes is low in persons less than thirty years of age. **Figure 1** shows that the majority of cases of diabetes occur in patients who have reached the fifth, sixth and seventh decades of life; this chart is based on an analysis of a series of 600 cases of diabetes which I have observed personally.

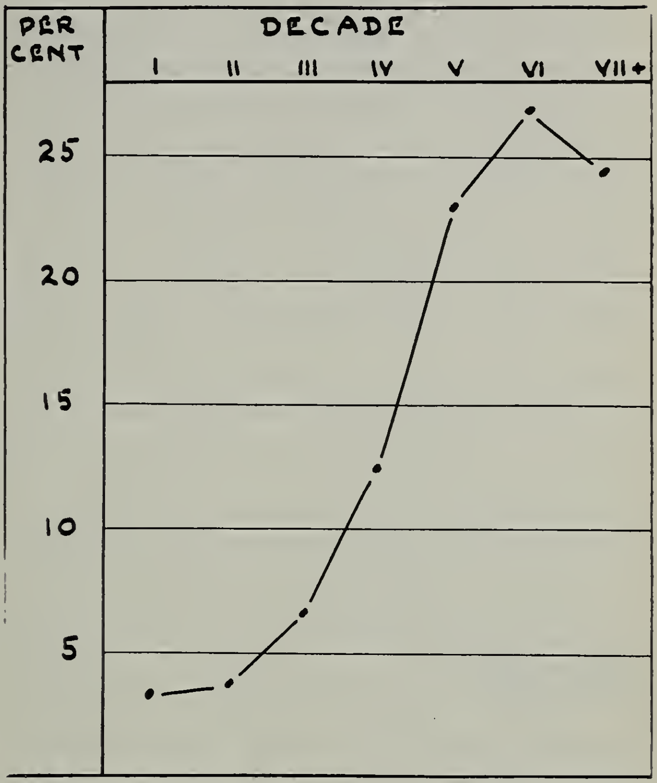

Chart 1. The Incidence of Diabetes in the Various decades in 6000 diabetics.

The relative frequency of diabetes in older persons was reflected in a study of glucose tolerance tests which were made on a series of patients presenting themselves for physical examination. The tests were performed on 1473 adults and 192 children. Normal glucose tolerance curves were obtained in 81.7 per cent of the children and in only 61.5 per cent of the adult group. This finding suggests that diabetes must be largely a degenerative disease which appears with advancing years, resulting from various affections, endocrine disturbances, infections, obesity, arteriosclerosis and senescence.

In the adult the onset of diabetes usually is slow, often extending over a period of years. When the impairment of carbohydrate metabolism develops slowly, the body has time for functional readjustment; in such instances, often the symptoms of diabetes are absent, and the condition is discovered only by routine laboratory studies. Generally speaking, diabetes in the adult, particularly among the older age groups, is relatively mild, as compared to the disease in children. Frequently the blood sugar does not reach a very high

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[*] Read before the sixty-first annual session of the Mid-South Postgraduate Medical Assembly, Memphis, Tenn., Feb. 14-17, 1950.

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level and shows little fluctuation. Once the necessary dosage of insulin has been established, it usually does not have to be increased, and often can be reduced and sometimes discontinued altogether, after a period of treatment. The adult is not so prone to suffer from intercurrent infections as is the child, and hence has fewer complications of diabetes from this cause. Furthermore, even when infections do occur, they seldom affect the diabetic state so seriously in an adult as they do in a child. Other complications of diabetes are more frequent and more severe in children than in adults.

The onset of diabetes in children is usually rapid, and is accompanied by most of the classical symptoms of the disease. The blood sugar usually is quite high and fluctuates widely. In children, the insulin dosage required is relatively high in proportion to the body weight and generally increases with time. Complications which cause serious upsets in the diabetic state and require readjustment of the treatment routine are relatively frequent in children. These are caused mainly by intercurrent infections, particularly the acute exanthemata of childhood. Any infection in a diabetic child may cause serious havoc and may produce severe complications. Diabetic coma most often occurs in children undergoing some intercurrent infection; however, coma is becoming an ever decreasing problem. Whereas, early in the insulin era, it was of frequent occurrence, I now see patients in diabetic coma only about once or twice a year. This is probably due to a better understanding of the problem on the part of medical men and better handling of complications and emergencies when they arise.

The problem of diabetes in children is serious for another reason which has become more evident in recent years. We are now seeing a good many patients who contracted diabetes as children and have had the disease for ten to twenty years who have arteriosclerosis, diabetic retinitis, which sometimes causes blindness because of retinal hemorrhage, and intercapillary glomerulosclerosis.

Etiology of Diabetes.—Heredity, infection and obesity are the three principal factors influencing the development of diabetes. Occasionally also an endocrine disturbance plays a part in the causation of the disease.

In a series of 6000 diabetic patients, the history indicated the presence of an hereditary factor in 19.3 per cent of the cases. In the 500 children in this series, there was a familial tendency to diabetes in 31.5 per cent, and this was slightly more prominent in Jewish than in Gentile children.

The most common precipitating cause of diabetes in children is infection. This was present, particularly measles, mumps, scarlet fever, tonsillitis, in 164 of the 500 cases of

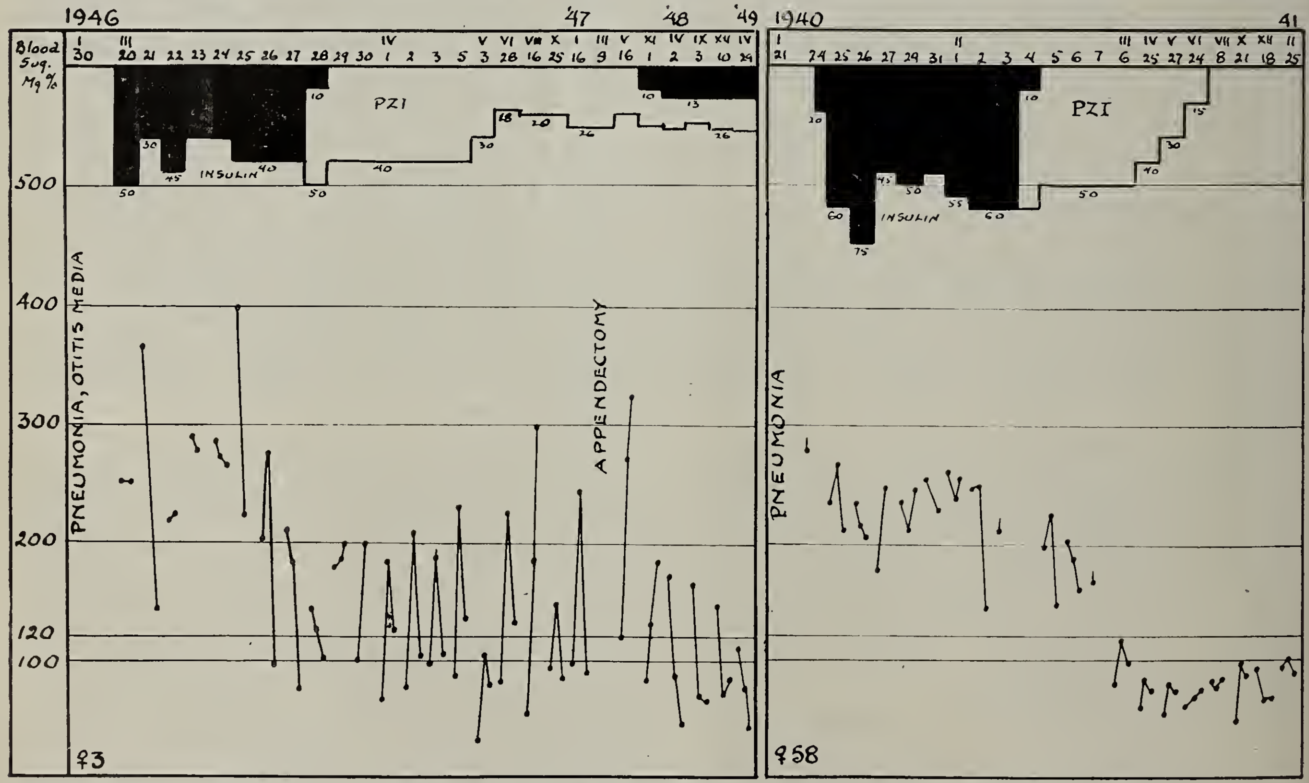

Chart 2. The Development of Diabetes following Infection in a Child and an Adult.

diabetes in children. In eighty-seven of these, diabetes appeared within sixty days after the onset of the infection. In some, the diabetes developed within a few days after the infection.

Infection is sometimes a precipitating cause of diabetes in adults, too, although its role is not so prominent in older patients. **Figure 2** illustrates two cases in which diabetes appeared following pneumonia. In the child, the diabetes was more severe, because the continuous administration of insulin has been required. In the woman, aged fifty-eight years, insulin was required for only six months and for nine years she has continued, with thorough control, on a slightly restricted diet. Of course, the outcome is not always so favorable, and some patients whose diabetes appears following an infection, in the older age groups, have to continue to take insulin.

The most important factor in the management of patients whose diabetes is related to infection is to recognize the disturbance in sugar metabolism or its aggravation early before the pancreas has suffered too much damage. This means the administration of adequate amounts of insulin from the start, to control the hyperglycemia. This protects the islets of Langerhans from further functional impairment and sometimes, as in the second case in Figure 2, allows adequate restoration of insulinogenic function.

Obesity is the most important factor in the etiology of diabetes in adults. There is only one reason for overweight, and that is overeating. Excessive intake of food over an extended period places an extra load on the pancreas; if this organ is endowed with ample reserve function, it will withstand the burden, but if the insulinogenic reserve is low, there will be a functional breakdown, with diabetes as the result. In my series of 6000 diabetic patients, 62 per cent of the males and 69.5 per cent of the females were or had at some time been overweight from 11 per cent to 220 per cent. Only one-third of these patients had always been of normal weight. An interesting fact in connection with the treatment of obese diabetic patients is that if the diabetes is not of long duration, the mere reduction of weight, which, of course, means a radical cut in food intake, will result in an adjustment of carbohydrate metabolism to normal, often without the use of insulin.

It is well known that overfunction of some of the endocrine glands precipitates hyperglycemia which, if it is allowed to continue, leads to frank diabetes. This condition is encountered in hyperthyroidism, hyperpituitarism (acromegaly) and in hyperadrenalism. When the primary endocrine disorder cannot be treated surgically, the symptoms of diabetes resulting therefrom have to be managed in the orthodox manner, that is, with diet and insulin. Thyroidectomy or medical control of hyperthyroidism often results in great improvement of carbohydrate metabolism in such cases. At times, hyperpituitarism can be controlled by roentgen irradiation and result in similar improvement of disturbed carbohydrate metabolism.

It should be recognized that prolonged medication with thyroid extract may sometimes result in diabetes. An example of this is furnished by the case of a nurse, aged sixty-two, whose diabetes developed after she had taken thyroid extract for three years (Fig. 3).

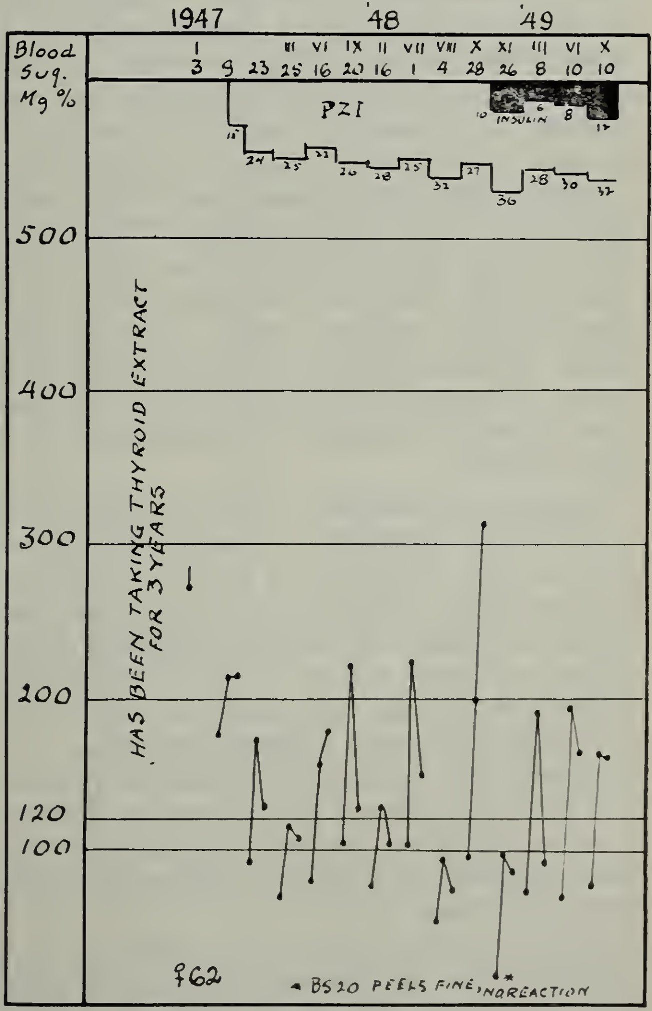

Chart 3. The Development of Diabetes following Prolonged use of Thyroid Extract.

The impairment of carbohydrate metabolism was sufficiently severe to require continuous treatment with diet and insulin. An interesting incidental point shown by this chart is that at one time her fasting blood sugar reached the low level of 20 mg. per cent and yet the patient suffered no reaction.

In an exceptional case, diabetes may result from hypothyroidism. I have seen several such instances, but they are relatively rare.

Normal Carbohydrate Metabolism.—Before one can assess accurately the significance of any deviation from the normal carbohydrate metabolism, as reflected in laboratory tests for sugar in the urine and blood, it is necessary to have a thorough understanding of the fluctuations that occur, with normal function. In the normal individual, the blood sugar rises after each meal, to various heights in different persons, but it returns to the normal level within one or at most two hours. This is designated as postprandial hyperglycemia, which is entirely normal. The same process occurs in a diabetic patient, except that the curve is accentuated; the rise is higher and the decline slower. Such a person may have a normal blood sugar in the morning, but the rise occasioned by eating breakfast has not subsided to normal, if the blood sugar is checked before lunch. If another determination is made before the evening meal, the blood sugar may be markedly elevated. This lag in the clearing of the blood stream of excess sugar is the essential difference between a normal and a diabetic person. The diabetic patient is unable to clear the blood stream of excess of sugar before the next meal because there is insufficient insulin available to achieve this function.

Diagnosis of Diabetes.—For the reasons just outlined, the diagnosis of diabetes cannot be made accurately without a study of the fluctuations of the blood sugar level throughout the day. It cannot be done on the basis of the finding of glycosuria or on the determination of the level of the fasting blood sugar. This is a point that needs constant reiteration and emphasis, for I still see numerous patients who have been treated for nonexistent diabetes or whose diabetes has been inadequately diagnosed because of mistaken reliance on these laboratory tests.

The most important point regarding glycosuria is not its presence in a single specimen, but the total amount of sugar excreted in twenty-four hours. This depends on two factors: the height of the blood sugar level and the individual's renal threshold for sugar, which varies considerably in different persons. It is ideal, of course, if a diabetic patient can be sugar-free during the entire twenty-four hours, but this is usually not the case. If only specimens are examined, a true picture is not obtained, for two specimens, for instance, may both show 2 per cent sugar, and yet there is a vast difference in the amount of sugar excreted if one specimen is 30 cc. and the other is 300 cc. The second specimen contains ten times as much sugar, yet the percentage is the same in both. Hence to appraise the significance of glycosuria, the volume of urine as well as the percentage of sugar must be measured.

Diabetes may be under thorough control without insulin, and yet the patient may show sugar in the urine. To illustrate this point, I cite the case of a woman, aged fifty-seven years, who had displayed glycosuria on a routine physical examination. A check showed that the blood sugar levels before meals were 119-113-214 and glycosuria was present in the last two urine specimens during the day. She took insulin for ten days, and as the blood sugar levels became normal throughout the day, the insulin was discontinued and the blood sugar remained normal. Nevertheless, the eight o'clock urine specimen showed a value of 1 plus sugar; at eleven o'clock, this was 2 plus and the four o'clock specimen showed a trace of sugar. With blood sugar levels of 103-102-

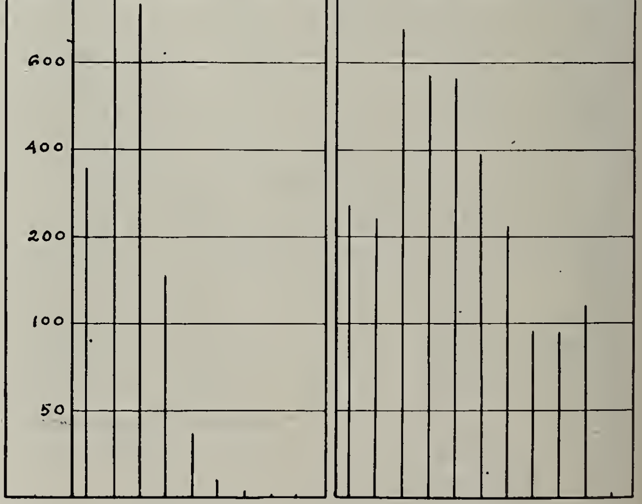

Chart 4. Glycosuria or the Lack of it at Various Blood Sugar Levels.

120, it is obvious that the diabetes is thoroughly controlled on a slightly restricted diet. However, if the finding of sugar in the urine were being used as the criterion, unneeded insulin would be administered. Such errors occur frequently in practice.

Not long ago, for example, I examined a little boy eighteen months old, whose blood sugar, on 6 units of insulin, was only 28 mg. per cent, and yet the urine showed 2 plus sugar.

Figure 4 shows the relationship between the blood sugar level and sugar in the urine in 6000 patients, at admission. The first section of the chart showed cases with NO glycosuria at various blood sugar levels. In most text books it is stated that the renal threshold for sugar is 180 mg. per cent. Experience proves that this simply is not so. Each patient has his own individual threshold for sugar. When you consider the number of cases in this series with no glycosuria at blood sugar levels of 200 mg. per cent or more, you will see for yourself that this finding is not particularly rare. A few of these patients showed no glycosuria with blood sugar levels of 300 to 600 mg. per cent.

In the second section of the chart are shown the number of cases **with** glycosuria at various blood sugar levels. Here the fact is evident that many patients have a very low renal threshold for sugar, since there are a large number of cases with glycosuria and a fasting blood sugar of 120 mg. per cent or less.

To emphasize the fallibility of glycosuria as a guide to the diabetic state, still further, **Figure** 5 illustrates the findings in a series of forty-one patients on whom blood sugar determinations were made with the patient fasting and three hours after a heavy carbohydrate meal. These are divided into four groups: (1) those without glycosuria at the start but with glycosuria three hours after the carbohydrate meal; (2) those without glycosuria at either time; (3) one case showing glycosuria at the beginning but none at the three-hour determination, and (4) those showing glycosuria at both determinations.

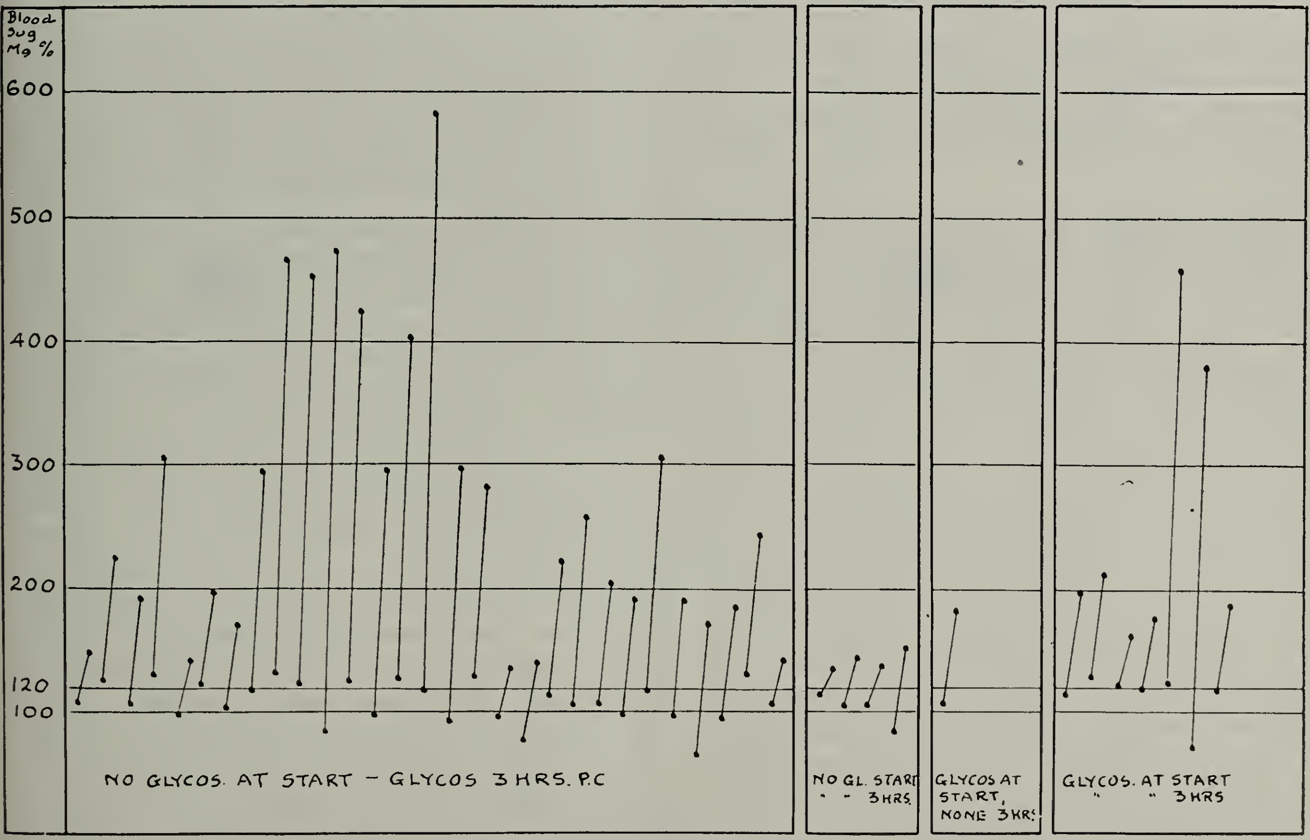

Chart 5. Correlation of the Blood Sugar Level in diabetics with Glycosuria taken at the same time.

This study shows the marked difference in various individuals; some have only a moderate rise in blood sugar after three hours and others show a marked elevation; and there is considerable disparity in the relationship of glycemia to glycosuria in these.

Figure 6 shows the relationship of glycemia to glycosuria in a group of diabetics on treatment. Here again you will note that there is but little agreement between the blood sugar

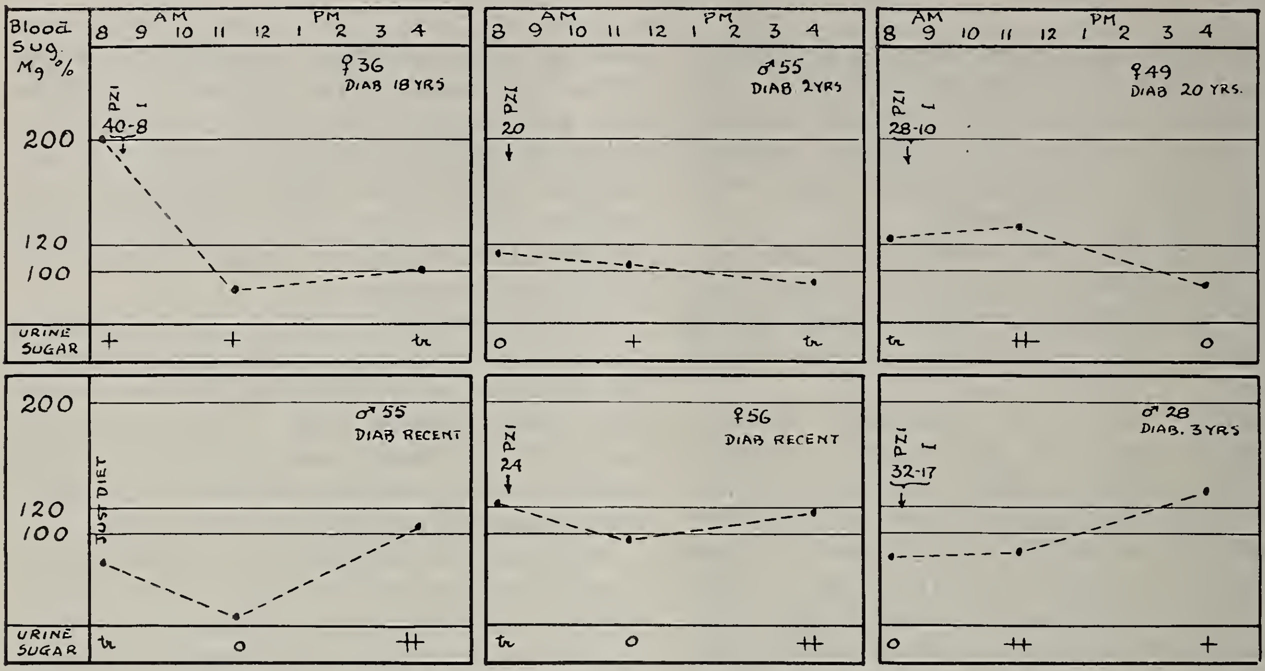

Chart 6. Correlation of glycosuria with the blood sugar level.

level and glycosuria. In these cases, if one were to regulate the dosage of insulin on the basis of glycosuria alone, one would certainly precipitate these patients to further difficulties.

In the diagnosis of diabetes, serious errors may also be made if the fasting blood sugar is accepted as an infallible guide to the diabetic state. Some patients may exhibit a normal fasting blood sugar, and yet show an abnormally high blood sugar level two and a half hours after eating a heavy carbohydrate meal. An illustrative case is that of a woman, aged fifty-four years, who was referred to me because of the finding of glycosuria on a physical examination. The fasting blood sugar was 93 mg. per cent and the urine was sugar-free. She had an ordinary breakfast and her blood sugar before lunch was 100 mg. per cent and again the urine contained no sugar. At noon, I directed that she take a heavy carbohydrate meal, and the blood sugar level, two and a half hours later, was 236 mg. per cent and the urine showed 1 plus sugar.

It is true, of course, that a case of this type usually represents an early, mild case of diabetes, but it is in such cases that the most good can be done for the patients. If such a condition is recognized before too much damage has been done, the situation can often be righted by diet alone, further damage to the pancreas is avoided, and there is no progression of the diabetic state.

Management of Diabetic Patients.—The practical way in which I proceed in the handling of a patient is as follows: The patient comes to the office and specimens are taken for determination of sugar in the blood and urine before breakfast. Then he is directed to eat breakfast of the type he usually eats. Specimens are again taken for determination of sugar in the blood and urine before lunch and before the evening meal. If the person is frankly diabetic, all three blood sugars, or at least those taken at noon and late in the afternoon will be high. If none of these are elevated, then he is directed to eat a heavy carbohydrate breakfast the following morning, or at the noon meal if the preceding blood sugar determinations are normal, and then a blood specimen is taken two and a half hours from the time he started eating. This reveals the hidden or mild cases of diabetes, for if there is any significant impairment of carbohydrate metabolism, the blood sugar two and a half hours after a carbohydrate meal will be elevated. If there is no elevation of the blood sugar under such circumstances, diabetes is excluded. The incidence of error with this criterion is extremely slight.

If, on the first day, the first two specimens taken in the morning and at noon show an elevation of blood sugar then, immediately after withdrawing the evening specimen, the patient receives 20 units of protamine zinc insulin and is directed to return to the office at 7:30 a.m. on the following and subsequent days. A fasting blood sugar determination is made each day, and another dose of insulin is administered, with an explanation of just how the injection is given. On the third day, he administers his own injection of insulin under supervision, with correction of any error in technic.

The fasting blood sugar furnishes a reliable index as to the dosage of protamine zinc insulin. When this reaches normal, it is obvious that the amount of protamine zinc insulin cannot be increased without risk of an insulin reaction. If the fasting blood sugar does not reach normal readily, the daily dosage of protamine zinc insulin is increased until it does. This usually requires four to eight days, and during that time, the patient has become well acquainted with the technic of insulin injections. By using the B & D special insulin outfit, the boiling of the syringe is eliminated, and the whole procedure requires but a few minutes.

If the fasting blood sugar is normal after a few days and does not drop too low so as to threaten an insulin reaction, then it is evident that the particular dosage used, whether it is 20, 25 or 30 units, is correct, and the patient is discharged for two weeks, to continue taking the protamine zinc insulin, in the determined amount, each morning. With this method of study and regulation of a diabetic patient, he loses no time from his work, develops no feeling of invalidism, has confidence in his ability to take the injections himself and avoids the heavy expense of hospitalization.

When he returns after two weeks, determinations of the blood and urine sugars are again made three times during the day, before meals. This check is important because, although we know that his fasting blood sugar is normal on the dosage given, we cannot be sure that the blood sugar is remaining within normal limits throughout the day. If the recheck shows that all three determinations are at or near the normal level, the same dosage of protamine zinc insulin is continued. If the fasting blood sugar is normal, the noon specimen elevated and the evening determination is normal; or if the fasting sugar is normal and the noon and evening specimens elevated, additional regular insulin is necessary to counteract the rise in blood sugar after breakfast. Usually, 10 to 15 units suffice to accomplish this control.

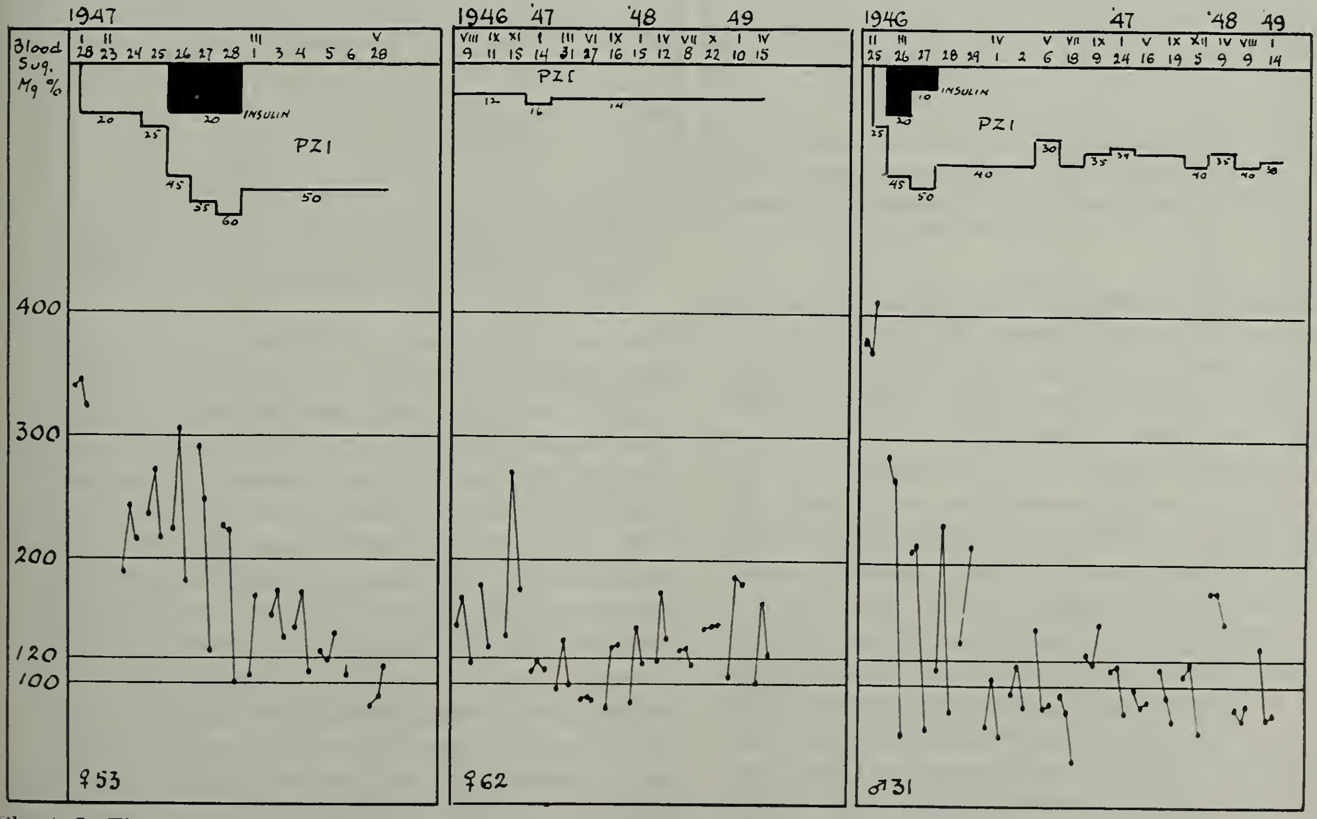

Chart 7. Three cases of diabetes controlled on Protamine Zinc Insulin alone.

Figure 7 shows three cases in which protamine zinc insulin alone controlled the hyperglycemia well throughout the day. Two of them received regular insulin, in addition to the protamine zinc insulin, for a short time at the beginning of treatment, but once the blood sugar reached a normal level, could be carried on protamine zinc insulin alone. It goes without saying that it is easiest for the patient to take only one kind of insulin, provided this provides satisfactory control of the blood sugar.

There are numerous instances, however, which require continuous administration of both kinds of insulin, that is, protamine zinc insulin for the prolonged effect and regular insulin for its immediate effect in controlling the rise of blood sugar after breakfast. **Figure** 8 shows such a case. This patient was aged sixty-six years when I first saw her. At that time she had had diabetes for five years, but was not under adequate treatment control, as shown by the fact that at the original examination, the blood sugar rose to 680 mg. per cent and she weighed but 85 pounds which was 39 per cent below normal for her height. She made progress on protamine zinc insulin alone, but the blood sugar did not recede to a normal level. After regular insulin was added to the protamine zinc insulin, the blood sugar returned promptly to normal and remained there, even though the dosage was only 8 units. When she had been under treatment for two and a half years and her blood sugar had been normal on a reduced insulin dosage, an attempt was made to discontinue the regular insulin and to control the condition by protamine zinc insulin alone. As the graph shows, the blood sugar rose promptly, and 6 units of regular insulin had to be reinstated before the situation was properly controlled. It is remarkable how small a dosage of regular insulin is effective in many of these cases, when control is inadequate with protamine zinc insulin.

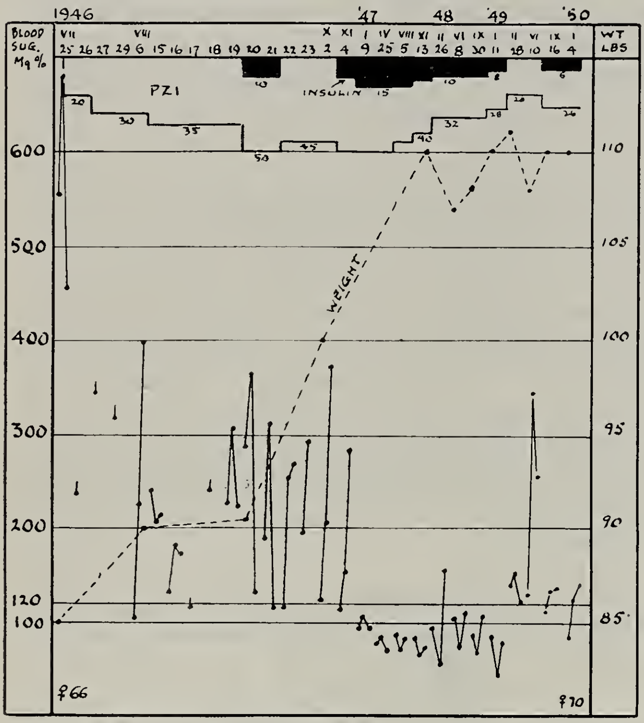

Chart 8. Illustration of the need of Insulin which needed to be added to the Protamine Zinc Insulin for a proper control of the diabetic state in an old lady.

In the management of diabetic patients, it is important to remember that insulin cannot be relied upon to effect satisfactory control in all cases. Moderate restriction of the diet is necessary to make sure that approximately the same quantity of food is taken each day. The diet can be fairly liberal, but the caloric content must remain essentially the same from day to day, or there is likely to be an upset in the status of the diabetes.

This is well illustrated in **Figure 9,** which illustrates the course of diabetes in a dentist, aged thirty-five years when I first saw him in 1938. At the outset, his fasting blood sugar was almost 300 mg. per cent. This, of course, alarmed him and he was anxious to cooperate conscientiously to correct the situation. He went on a drastically reduced diet for a few days, but the blood sugar remained high. Then he received 30 units of insulin for four days; this brought the blood sugar down to normal promptly and it remained normal. Then all insulin was discontinued and still the three blood sugar determinations throughout the day were normal, in fact, below normal. During this time he was extremely careful about his diet and he remained in good control for three years. Then the war came, with increasing emotional tension. He grew careless about his diet and could not resist candy and nuts, pie and cake, and his blood sugar again became elevated. When I returned from the Army and

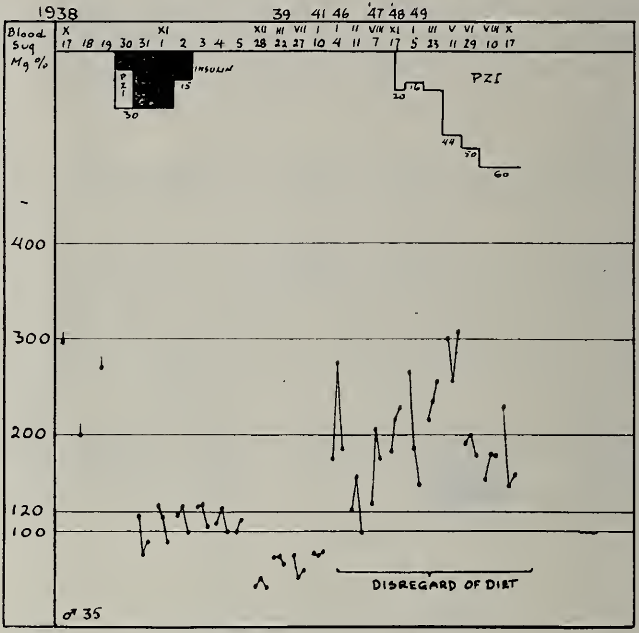

Chart 9. An illustration that "Insulin will not do it alone" in a patient who is continually breaking diet.

examined him again, five years after he first consulted me, the blood sugar was again near 300 mg. per cent. He tried again to control the diabetes by means of diet alone, but this was not effective. Protamine zinc insulin was given and gradually increased to a dose of 60 units a day. Even then his diabetes was not controlled well, not because the insulin dosage was insufficient, but because of his inability to resist large amounts of sweets. No, insulin alone cannot control diabetes!

Interpretation of Insulin Reactions.—Since several types of insulin are now in use, the interpretation of an insulin reaction must take into account the different effects produced by regular insulin, protamine zinc insulin and globin insulin.

Insulin exerts its effect as soon as it is injected or shortly thereafter, and its action is completed in about four hours. If a patient receives only this type of insulin, he must have two, three and sometimes four injections a day in order to control the blood sugar. This, of course, was necessary when this was the only kind of insulin available.

The action of protamine zinc insulin is delayed for about four hours after injection. For example, a dose injected at 7 a.m. does not begin to take effect until about 11 a.m. In the interim, the patient takes breakfast, which tends to produce a rise of blood sugar. After the action of protamine zinc insulin begins, it continues until the next morning. Theoretically, its action is regarded as lasting twenty-four hours, including the period of lag at the outset.

The action of globin insulin is intermediate between that of regular insulin and protamine zinc insulin. Its effect does not begin as promptly as that of insulin, although it is faster than protamine zinc insulin. Its effect lasts about eighteen hours.

With the specific properties of the various types of insulin in mind, it is possible in the individual case to determine which one or what combination should be used.

If an insulin reaction occurs within four hours after an injection of regular insulin, it can be due only to an excessive dose of this type. A patient who is taking protamine zinc insulin rarely has a reaction during the day, but such a reaction may occur during the night, toward morning. If such a reaction occurs, it means that the dosage of protamine zinc insulin must be reduced to avoid this undesirable effect. A reaction from globin insulin usually occurs late in the afternoon or early in the evening.

If a patient has to take a morning dose of regular insulin in addition to the protamine zinc insulin in order to control the after-breakfast rise in blood sugar, and has an insulin reaction about 11 a.m., it is evident that the reaction is caused by the regular insulin, since the protamine zinc insulin has not had time to act by this time. In such a case, the amount of regular insulin contained in the daily injection has to be reduced by a few units until such a reaction is eliminated. If the reaction occurs late in the afternoon or during the night, then it is the dosage of protamine zinc insulin which needs to be reduced.

Some patients have ample warning that they are going into an insulin reaction; others have none whatever. The former is lucky, for he can take some carbohydrate to avert a severe reaction. It is good advice to the patient who has no warning of an insulin reaction to keep some Karo syrup handy. Then, if he experiences a reaction, someone in the family can give him a tablespoonful by mouth if he can swallow, provided he is unable to do this himself. If this is not feasible, then someone in the family should administer two tablespoonfuls of the syrup in a glass of warm water as an enema. The sugar will be absorbed through the intestine and the patient will recover from the reaction. This method is especially effective in diabetic children.

The Outlook for Diabetic Patients.—With present knowledge and treatment methods, the outlook for diabetic patients is good. Patients whose diabetes is mild can usually manage to control the blood sugar by means of a slightly reduced diet. This applies particularly to the obese diabetics who must take a diet low in calories, with or without insulin, in order to reduce their weight to a nearly normal level. This means reeducation of the patient and a degree of self control that has never been exercised by the individual previously. Readjustment of emotional attitudes, avoidance of tensions, reassurance and constant supervision are all important in the management of such patients and cannot receive too much emphasis, if satisfactory results are to be achieved.

Patients who have to take insulin in addition to a regulated diet also have a relatively easy problem, when their status is compared to that of the diabetic in the pre-insulin era. Nowadays, in most cases, only one injection of insulin is necessary, and that is a small price to pay for continuing good health. Many patients with other diseases would be happy if their conditions could be controlled so easily. It is important to stress this point in dealing with patients, for many of them have some preconceived prejudice against the taking of insulin and are likely to say, "Doctor, I'll do anything just so I don't have to take insulin!" The physician must meet such attitudes with firmness, for the patient has no understanding of the medical problems involved and is not capable of judging whether or not he should take insulin. The physician must direct the treatment and not be swayed by such emotional attitudes on the part of the patient. In this connection, it must be emphasized that the time to start the administration of insulin is early in the disease when it can accomplish the most. If insulin is given late, then most of the insulinogenic function of the pancreas may be lost and there is little or nothing to be saved. This is calling out the fire department after the house has burned to the ground!

The life span of diabetic adults has been prolonged by many years since the advent of insulin, as vital statistics constantly show. This means, of course, that there is an ever increasing number of diabetics in this country, since they do not die early, as they used to do. These persons lead comfortable and satisfying lives with only small sacrifices. This good outlook, however, does not apply to the patient who is unwilling to shoulder his share of the responsibility in the treatment of his condition. The person who lapses into carelessness in regard to his diet, or refuses to follow instructions and cooperate with the physician, sooner or later finds himself in trouble, usually serious trouble.

The outlook for diabetic children is also, on the whole, quite good. Diabetes is much more difficult to control in a child than in an adult, since the condition is usually more severe and is less stable than in the older person. Many intercurrent infections interfere to upset the diabetic status; such crises require increased insulin dosage if serious complications and severe progression of the diabetes are to be prevented. Furthermore, it is much more difficult to control the diet of diabetic children, since they lack mature self control and are constantly being subjected to temptations as they mingle with non-diabetic children. Another factor enters into the breaking of dietary routine by children which is not always recognized. Frequently such children are receiving too much insulin. If this does not necessarily produce a frank insulin reaction, it does produce a pronounced hypoglycemia which creates a sensation of great hunger. In such a case, a child's body is crying for food for nothing else will relieve the hunger pains; and if the child cannot receive sufficient food, according to his schedule, to counteract this reaction, then he is bound to take that food by stealth. This is why periodic checks of the blood sugar before meals are extremely important in the juvenile, for these permit the regulation of insulin dosage to control fluctuating blood sugar levels, and thus to avoid the danger of overinsulinization which will eventually and inevitably lead to bad dietary habits.

Less than three decades have passed since we have been treating diabetic children with insulin, and hence the final conclusion on this group of patients is not yet available. Some reports at present appearing in the literature seem quite alarming for they state that nearly all diabetic children who have had the disease fifteen to twenty years are developing signs of degenerative disease, such as arteriosclerosis, diabetic retinitis which at times leads to blindness, intercapillary glomerulosclerosis, etc.

From my own observations so far, I do not feel so pessimistic about this problem. In a group of eighty-three juvenile diabetics whom I have observed by close follow-up for ten to twenty-five years, I have found albuminuria in 31.3 per cent and 68.7 per cent so far show no albuminuria. My impression is that those who were well controlled throughout the course of the disease have escaped the catastrophes of these serious complications of diabetes. By good control I mean that the blood sugar throughout the twenty-four hours should be as nearly normal as possible.

Summary.—Since there are an estimated two million diabetics in the United States, diabetes presents a definite problem for the general medical practitioners. An understanding of the principles involved in its proper diagnosis and treatment makes the problem relatively easy to handle, provided arrangements are made for the determination of blood sugar which is essential for proper guidance in the management of this disease. The general practitioner does not himself perform a Wassermann test; and similar arrangements are possible to have the necessary blood chemistry performed by separate laboratories in the handling of diabetic patients.

Infections in diabetics usually cause serious upsets in the diabetic status and usually require an increase of the dose of insulin to prevent acidosis. Infections in non-diabetic patients frequently precipitate the onset of diabetes, particularly in children.

Obesity, which represents the result of overeating over a prolonged period, frequently leads to diabetes. An obese person who develops diabetes should receive a diet of low caloric content to reduce the weight and to establish hygienic eating habits. The reduction in diet is often sufficient to control the diabetic condition in such patients, after the preliminary treatment has restored the insulinogenic function.

The diagnosis of diabetes cannot be based on glycosuria alone. It only represents a sign that further investigation is necessary, and the true state of carbohydrate metabolism can only be properly evaluated by studying the blood sugar level throughout the day. The fasting blood sugar determination only tells part of the story and is not a reliable index; this must be established by a blood sugar determination two and a half hours after a heavy carbohydrate meal. Any attempt to regulate the dosage of insulin on the basis of the presence or absence of glycosuria frequently leads to serious errors, since a patient may have a normal or even low blood sugar and still show heavy glycosuria; conversely, sugar may be absent from the urine when the blood sugar is abnormally high.

Insulin alone is not adequate for the control of diabetes in most cases. A reasonable reduction and consistent regulation of the diet also are essential.

Insulin reactions must be interpreted in relation to the type of insulin, or combination of preparations of insulin, used.

Diabetes in the adult is not so serious, as a rule, as it is in the child, and is easier to treat adequately. Usually a growing child needs increasing amounts of insulin as his body size increases. In addition, the problem of treatment in the child is complicated by violations of dietary rules and by intercurrent infections.

The outlook for diabetic patients, both adults and children, is good when a reasonable control of the condition is maintained, under competent medical supervision.

The Management of the Patient with Hypertension*

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The purpose of this paper is to present a discussion of the management of the patient who presents himself at the physician's office because of an elevated arterial blood pressure. Such a discussion must take into account the chronological development of current concepts concerning this condition. Richard Bright[1] in 1836 described the first case of hypertension, reporting a case of nephritis in which left-sided cardiac hypertrophy occurred without the co-existence of valvular heart disease. The clinical study of hypertension was made possible by Riva-Rocci[2] who introduced the first satisfactory sphygmomanometer. Nephritis was the accepted cause of hypertension until 1895 to 1900 when Allbutt demonstrated that hypertension could exist before significant sclerosis of the renal or systemic arterioles occurred. Methods of evaluating kidney function came into use and it was ascertained that many patients with elevated arterial blood pressure had normal kidney function. Allbutt[3] separated this group of cases from those with renal disease and called the condition hyperpiesia. Frank[4] in 1911 described the condition as essential hypertension. The concept was accepted that hypertension existed independently of the kidneys and was produced by constriction of the arterioles.

Attention was focused again on the role of the kidney as an etiological agent in arterial hypertension by the work of Goldblatt[5] on renal ischemia. He produced arterial hypertension in the experimental animal by constricting the renal artery to one kidney. His work was enthusiastically received as a partial solution to the problem of hypertension. Butler reported successful treatment of two children with unilateral pyelonephritis in whom the hypertension was relieved by nephrectomy. Smith[6] recently reviewed all available reports bearing on the incidence of unilateral kidney disease in hypertension. He found only 47 well documented cases of significant blood pressure reduction lasting for more than one year, out of 242 unilateral nephrectomies. Braasch[7] reported that less than 1 per cent of the patients with hypertension seen at the Mayo Clinic had renal lesions amenable to surgical treatment.

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Such a case came under our observation in January 1949 when a 17-year-old white girl came into our office complaining of headache, general malaise, nocturia and recurring transient episodes of discomfort in the right flank. It was found that she had a persistent hypertension varying from 150 to 180 systolic and 90-120 diastolic. Clinical study revealed that she had an orthostatic albuminuria. Kidney function studies were normal as measured by the urea clearance test, the concentration test, and the intravenous P.S.P. test. The intravenous histamine and benzodioxan tests were normal. An intravenous pyelogram and retrograde pyelogram showed a right atropic kidney with hydrocalyxtasis of the right superior calyx, with an associated compensatory hypertrophy of the left kidney. The kidney function was normal on the left and sharply impaired in the right kidney. Right nephrectomy was done. The right kidney weighed less than 70 grams, showed chronic atrophic pyelonephritis with medial hypertrophy of the right renal arteries. This patient has maintained a normal blood pressure for 14 months and is now a student nurse. Unquestionably unilateral nephrectomy has been effective in relieving hypertension in some cases. However, in the main, it has failed. The indications for surgery in unilateral kidney disease should rest upon conservative and recognized surgical indications and not upon the hope of reducing an elevated blood pressure.

The specific causes of hypertension include glomerular nephritis, pyelonephritis, polycystic kidney disease, hydronephrosis; diffuse vascular diseases as periarteritis nodosa, disseminated lupus erythematosis; endocrine disorders, including pheochromocytoma, adrenal cortical tumors, ovarian tumors; pituitary basophyllic adenomas; specific toxemias of pregnancy; coarctation of the aorta and intracranial diseases. However, the specific causes of hypertension comprise only about 10 per cent of all hypertensive cases.

It is estimated that between 40 and 50 per cent of the people in the United States over 40 years of age, and between 15 and 20 per cent of people between 20 and 40, have hypertensive disease. The total number approximates 15 million people of whom one-half over 40 years of age will die of hypertension, or one of its complications.

Natural History of Hypertension

In approaching the study and treatment of any disease, knowledge of the natural history and clinical course of the disease is essential. In reviewing the voluminous literature on the treatment of essential hypertension, it becomes apparent that this basic fact is usually overlooked. Hypertension may be defined as an elevation of arterial blood pressure of unknown etiology. The underlying mechanism producing elevation of the blood pressure has never been solved except in pheochromocytoma, in which the hypertension is produced by excessive adrenalin production.

Hypertension is a symptom, a vascular response of varied etiology probably resulting from many factors and deserves special attention because it gives rise to physiological and structural changes in the body. The earliest phase of hypertensive disease consists in mild to marked variations from normal to abnormal levels of the blood pressure. The onset of hypertension is insidious, with diurnal variations, the blood pressure being low in the morning and rising as the day progresses, or it may fluctuate irregularly. It is generally recognized that excitement may elevate the normal blood pressure to abnormal levels. Certain individuals seem to establish the reaction pattern of elevation of the blood pressure in meeting these situations. Hines and Brown[8] devised the cold pressor test which consists of immersing the hand in ice water for a certain time and noting the blood pressure response, which in certain individuals may be elevated. Ayman[9] devised the test of holding the breath for 20 seconds and showed that some individuals responded with excessive elevation of the blood pressure. Such patients have been described as hyper-reactors. Hines reports a follow-up study in patients admitted to the Mayo Clinic and found the incidence of hypertension extremely high in the group of patients with initial blood pressure reading of 140 over 90, as compared with those who had absolutely normal readings. In addition to the probability of an inherited constitutional vasomotor instability, Menninger[10] points out that suppressed emotion or excessive and hostile impulses, may be channeled off through the vegetative nervous system, producing elevation of the blood pressure. Smith[11] demonstrated a pressor effect associated with reduced renal blood flow, similar to that produced by epinephrin, in man subjected to sudden fright.

In the treatment of hypertensive patients, it is a common experience to see marked aggravation of hypertension produced by emotional stress and strain. Stewart Wolf et al[12] reported the study of 58 subjects with essential hypertension, who had been studied from the standpoint of overall reactivity to threats arising out of problems of day-to-day living. It was found that they meet the threats and challenges of everyday life with an attitude of restrained aggression and display a vascular reaction characterized by elevation in blood pressure and renal vasoconstriction. Cannon[13] studied bodily changes in pain, hunger, fear and rage, and pointed out that "the cornered hypertensive man or animal is mobilized for fight or flight."

Ranges[14] has pointed out that hypertensive disease may exist over many years in an asymptomatic or benign phase. He reports the study of 241 individuals who worked for the Metropolitan Life Insurance Company, who were examined annually over a period of ten to twenty-five years and who had hypertension throughout this period. The average age at which significant hypertension appeared was 39.5 years. Most of these individuals had no symptoms related to their hypertension. Moderate cardiac enlargement occurred in 15 per cent and about one-third had electrocardiographic changes. He pointed out that hypertension may exist in the benign phase over a long period of time in spite of cardiac hypertrophy, electrocardiographic changes, and even retinal changes.

The clinical course of hypertension cannot necessarily be correlated with blood pressure levels. The expectancy of hypertensive individuals is not considered good when the diastolic blood pressure is persistently above 120 and the systolic pressure above 200. The onset of hypertension in young individuals usually offers a poor prognosis. The course of hypertensive disease is usually divided into four grades. Grade 1 shows minimal changes in the fundi without cardiac or renal impairment. Grade 2 shows widening of the arterial light reflex, caliber changes, and arteriovenous compression. Grade 3 shows fundus changes as noted in Grade 2, with occasional hemorrhage or exudate. The heart is enlarged and the urine usually contains albumin and casts. Grade 4 shows exudate and hemorrhage of the fundi with edema of the optic discs, cardiac enlargement with congestive failure, renal impairment, and occasionally cerebral accidents.

It is impossible to predict the course hypertension will take in a given case. Mr. C. F. J., 40 years of age, came to me in September 1936, complaining of insomnia, occasional headaches, slight dyspnea and high blood pressure. His father died of high blood pressure and one brother had an elevated blood pressure. He first discovered the elevation of blood pressure during an insurance examination in 1925, at the age of 29. When he came to me, his blood pressure was 200 over 120, arteriovenous compression and tortuosity of the retinal arteries was noted, and the heart was moderately hypertrophied to the left. The electrocardiogram was normal, urinalysis negative, blood non-protein nitrogen normal, and the kidney function tests were within normal limits. He was kept under observation and his basic blood pressure fluctuated from 170 over 100 to 200 over 120. Under empirical medical treatment he got along quite satisfactorily until 1944, when he developed mild cardiac decompensation and evidences of left-sided cardiac strain. The retinal changes had progressed to the exudate stage. The kidney function and blood chemistry remained normal. Treatment for congestive heart failure was instituted with moderate improvement. However, the progress of the vascular disease continued. In 1945 he was referred to Dr. Kempner at Duke University, where a diagnosis of hypertensive, vascular disease with myocardial involvement and vascular retinopathy was made. He was advised to follow the rice diet and rest twenty hours daily. At the end of four months he was able to return to work with sharp restriction of activity. He refused to follow the rice diet longer and was placed on a low sodium diet. He died of coronary thrombosis. In this patient the onset of hypertension occurred early in life and continued over a period of 22 years. The course of the disease was insidious until the last three or four years of this patient's life, when it accelerated rapidly. In contrast to the above case was Mrs. E. L. D., who came to me in 1927 for examination at 66 years of age, and was found to have a blood pressure of 220 over 110. The renal and cardiac status were normal. Her hypertension continued asymptomatic ranging from 180 to 240 systolic over 100 to 130 diastolic, for 22 years, until her death in 1949 because of apoplexy at the age of 88. I could not establish at what age the onset of hypertension occurred in her case. However, it was certain that the onset was noted before she was 50 years of age.

The benign phase of hypertensive disease terminates when the cardiac, cerebral or renal systems develop insufficiency. The heart is the most vulnerable organ in essential hypertension and accounts for 66.4 per cent of deaths in that disease, while cerebral vascular accidents account for 14 per cent and uremia 8.5 per cent of deaths. Approximately 75 per cent of cardiac deaths result from congestive heart failure, while 25 per cent result from coronary thrombosis. Left-sided cardiac hypertrophy develops eventually in about three-fourths of the cases of hypertension. Roberts and Wearn[15] found a definite decrease in the concentration of capillaries associated with an enlargement of individual muscle fibers in the heart muscle, and concluded that at some point in cardiac hypertrophy a point is reached where the exchange of oxygen and metabolites is impeded, producing heart failure. Accentuation of the aortic second sound, aortic and apical systolic murmurs associated with a forceful apex heartbeat, eventually develops in most cases. Tachycardia and transient gallop rhythm may be noted. Cardiac arrhythmias develop eventually in about one fourth of cases, including extrasystoles, auricular fibrillation and pulsus alternans. Congestive heart failure and attacks of pulmonary edema may supervene. Angina pectoris may be encountered in hypertensive heart disease, and coronary thrombosis and infarction are frequently terminal events.

Clinical Study of the Patient

When it has been established that a patient has persistent hypertension, a thorough history and physical examination should be done. Careful examination should be made for the specific causes of hypertension and to evaluate each case properly. A family history of hypertension should be noted. Previous history of hypertension is of importance in establishing the duration of the disease. The occurrence of pre-existing renal disease or toxemia of pregnancy should be inquired about. The interview should be conducted in a sympathetic manner. A careful review of the systems should be made. Symptoms occurring in paroxysmal manner such as headache, flushing, dizziness, weakness and sweating, may indicate the presence of pheochromocytoma. Recently a nurse in one of the Atlanta hospitals became interested in a patient taking the blood pressure frequently, and reported considerable fluctuation. Careful study of this patient revealed a pheochromocytoma which was successfully treated surgically. The physical findings in a given patient depend on the stage of the hypertensive disease. In the early stage of hypertension, the only positive finding may be the elevated blood pressure. Later, frank hypertensive heart disease with cardiac hypertrophy, congestive failure, auricular fibrillation or coronary infarction, may be present. Careful examination of the eye grounds may reveal the presence of retinal hemorrhages, exudate, or marked narrowing and tortuosity of the retinal arteries. Papilledema may indicate the presence of malignant hypertension. Teleoroentgenogram may reveal cardiac enlargement and the existence of edema in the lungs. The electrocardiogram may show left ventricular strain, coronary thrombosis or cardiac arrhythmia. Laboratory examinations should include repeated urinalysis, noting particularly albuminuria, casts, red blood cells and pus. The concentrating power of the kidney should be determined and rechecked occasionally as indicated. In the presence of continued albuminuria, serum proteins should be done and non-protein nitrogen levels ascertained. The intravenous P.S.P. test may be done, but is rarely of value. Intravenous pyelograms are indicated 1) in the study of young people with hypertension; 2) in the cases with the history of previous disease in the urinary tract; and 3) where abnormal findings are present in the urine. The excretory urogram is of importance in measuring the excretory function of the kidney as well as disclosing unilateral kidney disease.

The scientific study of the hypertensive patient depends not exclusively on repeated estimation of renal function, urography, electrocardiography, or any method of precision in diagnosis, but on the examination of the individual and the correlation of these findings with the patient's constitutional, psychologic, environmental, educational, and economic level.

Treatment

The management of the patient with essential hypertension depends on many factors including the specific underlying cause, stage of the disease and severity of the disease. The surgical removal of pheochromocytoma may be expected to relieve hypertension. This disease must be looked for in hypertension cases and not all patients exhibit fluctuations in blood pressure as in some cases it is fixed at a high level. The intravenous histamine test producing elevation of blood pressure and the benzodioxan test producing lowered blood pressure, are valuable aids in the diagnosis. In the absence of pheochromocytoma the benzodioxan test may have a pressor effect elevating the blood pressure. Green et al[16] reported the typical occurrence of hypertensive encephalopathy with convulsive seizures following the test. In certain cases, the blood pressure will return to normal after surgical removal of one kidney. In the early stage of hypertension no organic changes can be found and one deals only with an elevated blood pressure which fluctuates irregularly. The benign phase of hypertension may exist for years with little evidence of advancing vascular disease. However, it must be pointed out that hypertension is variable and unpredictable in its course. Loofbourow and Palmer[17] describe a constitutional susceptibility and resistance to hypertension. One patient will tolerate a level of high blood pressure for years while another patient with similar blood pressure will have rapidly advancing vascular disease. The physician should be alert to this difference in tempo in hypertensive patients, and the treatment should be varied accordingly. The great majority of hypertensive individuals are in the benign stage of hypertension. The conventional empirical treatment of hypertension may be successful in these cases. They should be seen at regular intervals and an active interest should be shown. Successful treatment often is in proportion to the confidence the patient has in his physician. The patient should be informed about his hypertensive disease as the diabetic is taught the fundamental reasons for following diabetic treatment. The basic level of blood pressure should be determined and too much importance should not be attached to the blood pressure level at a single examination. The symptoms noted in the early phase of hypertension are usually psychoneurotic in origin. The pattern of symptoms for a given individual are frequently constant and encountered over and over through the years. A thorough knowledge of the environmental, economic, social, personal and educational background of the patient is often of value. Treatment should begin when the hypertension is discovered and the patient's attention should not be focused on the level of blood pressure. It is probably best to avoid telling the actual level of the blood pressure, but to explain that the level of blood pressure is not fixed. Mild sedation may be helpful, using one-fourth grain of phenobarbital before meals and at bedtime. Psychotherapy consisting of reassurance, sympathetic questioning about emotional problems, and above all, listening to the patient's story, is beneficial. The individual should be treated, and not the symptom of high blood pressure. Patients should be taught moderation in diet and activity. Weight reduction should be instituted for the obese. This may be accomplished by a diet of 1000 to 1200 calories with the cautious use of dextrorotary amphetamine 2.5 to 5 mgs. 30 minutes before breakfast and lunch, to control hunger and depression. These patients should be seen at regular intervals, the weight checked, and encouragement to follow the treatment should be given. These patients should be made to understand that they must form new habits of eating in order to maintain their weight reduction. The factors indicating more radical forms of treatment consist of persistent elevation of the systolic blood pressure over 200, the diastolic blood pressure above 120, the development of neuroretinitis, with papilledema, elevation of the non-protein nitrogen, the onset of congestive heart failure, or the occurrence of hypertensive encephalopathy. Lability of the blood pressure may indicate a better outlook. Cases showing considerable reduction in blood pressure to bed rest or to sodium amytal narcosis, usually have a better prognosis. The treatment of the more advanced stages of hypertensive disease centers about the system involved. Cardiac complications with congestive failure, coronary thrombosis, and other cardiac complications, should be treated according to accepted ideas. These include the use of digitalis, quinidine, restricted activity, mercurial diuretics, salt and fluid restriction. Vasospastic symptoms such as headache, dizziness, or cramping in the extremities may be treated by the use of analgesics or potassium thiocyanate. Episodes of hypertensive encephalopathy may be treated with the parenteral use of hypertonic fluids such as glucose or magnesium sulphate. Spinal puncture may be resorted to.

In recent years intensive search for drugs which block sympathetically innervated vasoconstriction, has been carried out. Tetraethyl ammonium bromide, or chloride, dibenamine, pentaquine, and dyhydroergocornine, have been studied. Freis[19] reported that dyhydroergocornine causes reduction of arterial blood pressure, with an associated decrease in total peripheral resistance. This action was maintained over several hours. He also studied the effects of veratrum viride and demonstrated the effectiveness of this drug in producing sustained decrease in blood pressure. However, the margin between therapeutic and toxic effects is narrow.

Diet and Hypertension

A connection between diet and hypertension has been suspected for a long time. The Karrell diet, consisting of 800 cc. of sweet milk in 24 hours, represents the first widely used diet restricting salt and fluids. It was introduced about 1850 and advocated in the treatment of cardiac and renal diseases. Allen[16] in this country first recommended salt restriction in treating hypertension, reported favorable results in some cases, and called attention to the symptoms associated with sodium depletion. His work was not widely accepted and interest in salt poor diets was not revived again until Kempner's[17] enthusiastic reports on the use of the rice diet. This diet consists of rice, fruit, sugar and restriction of fluids to 1000 cc. in 24 hours. The diet provides from 1500 to 2400 calories, consisting of 0.2 grams of sodium, 5 grams of fat, 20 grams of protein and 300 to 400 grams of carbohydrate. Boiled or steamed rice from 250-350 grams, dry weight, is consumed in 24 hours. Fruit and sugar are added to make up the desired caloric content. Kempner[18] recently reported the treatment of 777 patients with hypertensive vascular disease who followed the rice diet from 4 to 1150 days. The average blood pressure reduction was 198/116 to 150/96. His demonstration of lowered non-protein nitrogen, diminished cardiac size, lowered arterial blood pressure, subsidence of neuroretinitis, improvement in the electrocardiogram and clinical improvement of patients, is most impressive. Aside from being monotonous, the diet can be easily followed and provides low content of sodium, protein, fat and cholesterol values.

The rice diet has not been as successful in the hands of other investigators (Chapman and Gibbons[20]). The effectiveness of the rice diet has been attributed to the low sodium content. A variety of salt poor diets have been advocated. The low sodium diet is more palatable than the rice diet and patients will follow it longer and with less inconvenience. All food is prepared without salt or baking soda and no salt is used at the table. Foods containing sodium chloride are avoided. Certain inherent dangers arise from the long continued use of low sodium diets. The symptoms usually arising from sodium depletion consist of nausea, vomiting, weakness and fatigue. In the presence of sufficient renal damage, shock, or non-protein nitrogen retention, with the onset of uremia, may occur.

Sympathectomy

Surgery on the sympathetic nervous system is widely used in the treatment of hypertensive disease. Differences of opinion exist concerning the selection of cases. Patients in the benign stage of hypertensive disease are excluded. The operation has been used in the early labile hypertensive without irreversible vascular disease by some surgeons, and reserved for the late hypertensive case with advanced vascular disease by others. Patients under fifty years of age without elevated non-protein nitrogen, are preferred. The presence of hypertensive encephalopathy with elevated spinal fluid pressure and pre-existing coronary infarction, or cerebral vascular accidents, are usually considered contra-indications to the operation. Careful clinical screening of cases with proper evaluation of kidney, cardiac and cerebral functions, is important. The emotional stability, economic and social status of the patient, should also be considered. Sympathectomy is probably the treatment of choice in the early phase of malignant hypertension. Goldring and Chasis[21] reviewed the observations on 6,000 sympathectomized patients and reported considerable divergence of opinion regarding the value of the operation. No satisfactory preoperative guide has been established which has been reliable in anticipating the effect of sympathectomy. Fishburg estimates that sympathectomy is indicated in about 4 per cent of patients with essential hypertension. The supradiaphragmatic sympathectomy of Peet and the lumbodorsal sympathectomy of Smithwick are the operations most frequently used. Following sympathectomy the blood pressure is lowered and symptomatic relief is striking. In a few patients blood pressure has been reduced to normal where it remained. However, in most cases elevated blood pressure persists and in some it returns to the same levels existing before surgery. Disappearance of neuroretinitis and improvement in the electrocardiogram, have been reported. Certain objectionable effects follow sympathectomy, including pain, postural changes in blood pressure, anhidrosis, and sterility. Vascular accidents common to hypertensive disease may occur after sympathectomy.

Psychotherapy

The emotional life of an individual with hypertension cannot practically be ignored.

The early and frequently the predominant symptoms throughout the course of hypertensive disease are those associated with nervousness, nervous tension or anxiety. These symptoms may be amenable to simple treatment. Ayman[22] in 1930 treated forty hypertensive clinic patients enthusiastically with a placebo and reported definite improvement in 33 patients or 82 per cent. He concluded that the symptoms associated with essential hypertension are so frequently of psychic origin that they may be relieved by suggestion inherent in any drug or method used by the physician. Proper psychotherapy should include analysis of the activities, anxieties, emotional and environmental problems of the patient with the pointing out of sensible attitudes. The psychic factors in each case of hypertension should be investigated with the same care as the renal or cardiac systems. Rearrangement of the patient's life with adequate provision for meals, sleep, rest, recreation, and moderation in physical and mental work, may be successful in some cases. Areas of conflict should be spotted in each case, the major conflicts identified, and resolved when possible. This requires time, patience, sympathy and intuition on the part of the physician. No substitute has been found for sympathetic encouragement and reassurance in the psychotherapy of these patients.

Summary

Essential hypertension is a disease of unknown etiology probably mediated through some neurogenic or humoral mechanism. It is essentially a medical problem. The management of the patient with hypertension includes the total study of the individual patient. The treatment of essential hypertension should be personal, positive, enthusiastic and may include the judicious use of drugs, the low sodium diet or the rice diet, psychotherapy and sympathectomy. The natural history of hypertension is variable, unpredictable and complicates the evaluation of any regimen of treatment.

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Suppurative Diseases of the Lungs and Bronchi*

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IN THIS presentation will be considered those infectious diseases of the lungs and bronchi which are characterized by cough, purulent sputum, fever and occasional hemoptyses, but excluding tuberculosis. Lung abscess, bronchiectasis, and infectious cystic disease are the commonly recognized components of what is usually a rather generalized infectious process. When we speak of suppurative conditions of the lung we usually refer to one of these entities or some combination of them, regardless of the type of specific organism responsible for their presence.

Pathology

Lung abscess implies the destruction of lung tissue by an infection and liquefaction of the necrotic tissues. It always follows an interstitial pneumonitis which is a fairly common entity found in various virus infections (so-called virus pneumonia or primary atypical pneumonia), and is frequently seen in areas of lung parenchyma which become atelectatic for one reason or another.

The important question is why interstitial pneumonitis proceeds to abscess formation in one case whereas it resolves without suppuration in perhaps the majority of individuals. Although the natural resistance powers of the host play an important part, the most important differential factor is that of adequate bronchial drainage. Infection plus poor bronchial drainage is a combination prone to produce lung abscess.

Consequently, in lung abscess one must consider immediately the obstructive lesions which may be present, which are usually one of the following: 1) foreign body, a history of the inhalation of which may or may not be present, 2) carcinoma or other intrabronchial tumor, 3) stenosis of a bronchus or occlusion by pressure from an extrinsic mass, 4) thick gluey secretions made viscid by oversedation in an attempt to control the patient's cough, and 5) edema and swelling of the bronchial mucous membrane secondary to the pyogenic infection itself.

The pathologic changes found in **bronchiectasis** are usually of a more chronic type although they may appear acute due to a fresh reinfection. Interestingly enough, the ectasia or enlargement of the bronchi by which we identify the condition is not actually the significant factor. Far more important is the loss of the self cleansing mechanism of normal columnar ciliated epithelium. The basal membrane of the mucosa is likewise destroyed or damaged and elastic tissue fibers disappear, permitting the dilatation of the bronchus. The submucosa, which is normally a loose fatty connective tissue, becomes densely fibrotic and rigid, resulting in a thickening of the bronchial wall and loss of its elasticity. About the bronchi appear varying degrees of pulmonary atelectasis, pneumonitis and sclerosis. An entire lobe may become fibrotic, contracted and without function.

The significance of these changes can be readily appreciated when one considers that failure of the bronchi to cleanse themselves leads to a retention of infection and infected secretions with the production of additional pneumonitis, atelectasis and sclerosis. In turn, the obliteration of the alveolar structure make an effective cough impossible because there is no opportunity for air to enter the non-expanding segment of the lung to be forcefully expelled to carry out the bronchial detritis. Thus a vicious circle is set up and bronchiectasis, untreated, tends to be progressive, and recurring attacks of pneumonia or pneumonitis are to be anticipated.

Infected cystic disease of the lungs may resemble either lung abscess or bronchiectasis clinically, and the factors controlling its development in the acquired types so closely follow those of lung abscess and bronchiectasis that special consideration of its pathology will not be given here.

Diagnosis

The diagnosis of lung abscess is greatly facilitated when a clear-cut history can be obtained to indicate a probable cause for bronchial obstruction. The story of aspiration of a foreign body or a history of a recent anesthetic, especially if accompanied by vomiting, is helpful. The anesthetic may be one intentionally induced for surgical procedures or one inadvertently produced during a night of revelry. Less help is obtained from the history of elderly patients who have poor oral hygiene and who inhale infected mouth secretions during their sleep, or from the history of patients whose infectious onset is acute and without recognizable cause, as in the patient developing a bronchiogenic carcinoma to the point of bronchial occlusion. It is not always recognized that opiates, atropine and other drugs used to "dry up a cough" may have the same effect.

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Physical examination of the patient with a lung abscess usually fails to indicate the severity or extent of the disease, since the bronchus leading to the affected area is usually occluded by edema and swelling of its membrane, if not by one of the other factors mentioned. Alteration in breath sounds cannot be detected and rales not present. If the involved area is located close to the periphery of the lung, evidence of consolidation can be elicited.

X-ray films may show an actual cavity when a lung abscess is present, or reveal an area of homogenous density which is the shadow of the area of atelectasis, pneumonitis and the cavity filled with pus. Cavity drainage is notoriously poor in pyogenic lung abscesses, so pus is forced past the swollen bronchial membrane only by pressure and the lung abscess is rarely if ever completely emptied. It is important in making x-ray examinations of the chest for lung abscess that films be obtained both in the postero-anterior and lateral projections so that the lobe or the segment of a lobe in which the abscess exists can be identified.

Exploration of a lung abscess by needle aspiration is to be strictly avoided. The danger attending such a procedure is too great for the amount of information to be obtained from it. To pass a needle through a clean, free pleural space into a lung abscess is to invite the formation of an acute, overwhelmingly toxic empyema with a bronchopleural fistula, which may be extremely difficult to control.

The use of bronchograms, filling the bronchial tree with iodized oil, is usually disappointing in making a diagnosis of lung abscess. The same bronchial obstruction which produces the abscess in the first place prevents the entrance of oil into the abscess cavity. Of course an area excluding the oil can be demonstrated but this still does not make the differential diagnosis between a lung abscess and an area of pneumonitis secondary to a tumor mass.

Bronchoscopic examination is indicated in all cases, both as a diagnostic and therapeutic procedure. It is imperative that the obstructive element be identified and the bronchial orifices from which pus is seen ebbing are noted. At the time of bronchoscopic examination the edema and swelling of the mucous membrane may be shrunken with adrenalin, and drainage of the abscess through the bronchus will be improved. Foreign bodies may be observed and removed, and tumor masses may be biopsied for identification.

The diagnosis of **bronchiectasis** is somewhat more easily made. Of inestimable help is a clear cut history of a severe infection such as whooping cough, measles, pneumonia, or bronchopneumonia at which time the patient was given heavy sedation to "control the cough" and "to give the patient some rest." (As effective symptomatic relief could have been obtained by a bronchial drainage routine without the production of bronchiectasis). One also suspects bronchiectasis when an aspirated foreign body has been retained over seventy-two hours, or if the patient has a chronic cough productive of mucopurulent sputum which is more abundant in the morning, and particularly if he has had recurring attacks of "pneumonia" and occasional hemoptyses. What is not so easily recognized is bronchiectasis in the patient who has an hemoptysis without the preceding symptoms, but whose bleeding is nevertheless due to a bronchiectasis which has previously given him no trouble. Also difficult to recognize from the history is the patient whose presenting symptom is asthma, but whose asthma is secondary to a bronchiectasis.

The most characteristic finding on physical examination in bronchiectasis is the coarse roughening of the breath sounds, usually in the bases, and the wet moist rales heard over the involved areas. As in all cases of chronic pulmonary suppuration, clubbing of the fingers may be noted in extensive disease.

Bronchoscopic examination yields suggestive evidence of the presence of bronchiectasis, but the dilated bronchi themselves are rarely seen because of the characteristic narrowing of the bronchial lumen proximal to the dilatation itself. However, the presence of purulent material arising from the distal bronchi, as well as the loss of velvety sheen which is characteristic of normal mucous membrane, will frequently suggest the presence of bronchiectasis. Not infrequently a dirty gray membranous sheet of pus is found closely adherent to the bronchial walls.

The diagnosis of bronchiectasis is finally made with bronchograms following the introduction of iodized oil into the bronchial tree. A characteristic pattern of bronchi which have lost their taper is the first detectable evidence of bronchiectasis in these films. The walls of the bronchi are usually irregular and ragged and no longer smooth. As the disease becomes more pronounced, the actual cylindrical and saccular dilatations may be seen. Often in a scarred and contracted lobe the bronchial elements are clustered and are seen to be drawn together as fibrosis of the involved lobe progresses.

Treatment

To guide our orderly thinking while planning a course of treatment for any patient with suppurative disease of the lungs or bronchi, treatment will be considered in its four essential phases: 1, augmenting the patient's resistance to infection, 2, abetting the physiological processes leading to the control of the infection and repair, 3, chemotherapy and, 4, surgery. The principles of treatment of a fully developed lung abscess, interstitial pneumonitis, lobar pneumonia, suppurative bronchitis, and the acute infectious phases of bronchiectasis are so similar that they will be described together with the minor variations left to the discretion of the individual physicians.

1. **Patient's resistance.** Everyone knows that an essentially healthy person with good resistance can overcome an infection more readily than one who is weak and debilitated. In these days of injectible and ingestible drugs, it is easy to forget to pay attention to the fundamental factors of patients' resistance to infection which are, after all, the final necessary elements in curing the disease.

Patients overcome infection best when at bodily rest, so with acute suppurative processes of the lung they are put to bed as strictly as though in a tuberculosis sanatorium, and kept there until the infection has been overcome.

"Good rich blood" in a patient has always been an encouraging finding in patients with severe infection and, since these infections frequently produce a secondary anemia, it is important to observe the patient's blood level and to take active measures to keep the red count and hemoglobin at high levels. Iron therapy is indicated in secondary or hypochromic anemias, and in these days it is not too difficult to resort to transfusions to improve resistance and healing powers.

The role of proteins in the production of resistance antibodies has been proved in the laboratory. Accordingly, a high protein diet, supplemented if necessary by protein concentrates, promotes resistance and improves the healing abilities of the patient.

Vitamins, those mysterious catalytic factors in the metabolic processes, have likewise been shown to play a role in resistance and repair, and since we do not understand all of the functions of the individual vitamin fractions, it is permissible to use a shot-gun mixture which assures an adequate intake of all of the known essential vitamins.

2. **Physiological considerations.** This refers specificially to the establishment and maintenance of adequate drainage, without which no combination of drugs can be expected to heal a suppurative process. To this end a **bronchoscopic examination** is always advisable, to determine the presence of an obstructive lesion and when possible to relieve it.

After a free bronchial passageway has been observed or established, it is then possible for the patient to help the infected areas drain constantly. Passive postural drainage continuously is employed by elevating the foot of the patient's bed twenty inches above the floor. This is augmented by active postural drainage over the side of the bed for two minutes at a time, during which the patient coughs forcefully, every two hours while awake.

To render the pus thin and the secretions freely movable, expectorants are used, either ammonium chloride or potassium iodide. Sedation or cough syrups containing opiate derivatives are avoided. To make the expectorants effective, an extremely high fluid intake is maintained, even using intravenous fluids if necessary to produce complete hydration. This is accomplished when enough fluids are taken or given to cause the patient to put out 1500 cc. of urine in 24 hours.

It will be noted that when the patient is expectorating freely and the sputum output is high, his temperature will be low or normal. However, drainage through the bronchus has a tendency to close off intermittently with a sharp and sudden reduction in the amount of sputum, followed in 24 hours by a rise in temperature. For this reason it is well to roughly measure the sputum daily so that one of these episodes can be predicted and a bronchoscopic treatment performed before the abscess or infected area has an opportunity to be again distended with pus.

3. **Chemotherapy and antibiotics.** Drug therapy is being considered in third place because that is where it belongs. It pleases us to recall that a very respectable number of patients were being cured of lung abscess and other suppurative diseases of the lungs even before gramicidin and tyrothricin and sulfanilamide were discovered. That is, they were being cured when meticulous application of these factors just described were carried out.

Those early antibiotics are now all but forgotten and are replaced by newer ones which will in turn be all but forgotten a decade hence when still newer and improved ones are discovered. It is not my intention to depreciate the value of our chemotherapeutic and antibiotic drugs as **adjuncts** to the treatment of suppurative pulmonary disease for they have definitely helped shorten the morbidity and improve the results. I do mean to imply that they are inadequate in themselves to effect a cure of suppurative pulmonary disease and they do not comprise the primary treatment.

The use of antibiotics will be most effective when the offending organisms are determined by cultures and the appropriate drugs applied. We recommend and use penicillin and streptomycin, where indicated, by both the aerosol and intramuscular routes. As most of the organisms found in pulmonary suppuration are sensitive to one or the other of these drugs, we do not resort extensively to the more expensive chloromycetin and aureomycin, unless cultures of sputum indicate their use.

4. **Surgery.** The purpose of surgery in suppurative diseases of the lungs is twofold; 1, to remove foci of infection which cannot be permanently eliminated through the medium of the patient's resistance, reinforced physiology and chemotherapy, and 2, to remove irreparably damaged tissue which constitutes a constant hazard to the patient through its tendency to reinfection and impaired function.

In the case of lung abscess, one of the most vital responsibilities placed upon the physician is a determination of the proper time for abandoning the conservative measures in favor of surgical intervention. Failure to recognize this important cross road in the course of a patient's disease will result in prolonged and unnecessary morbidity, at least, with extra expense and loss of earning power, and frequently it will result in the loss of the life of the patient or his chances to recover fully.

There is no set time element which may be arbitrarily imposed for this change in therapy. The best way to manage these patients in our experience is to abandon "medical treatment" in favor of surgery **the first week that the patient fails to show marked clinical and x-ray improvement.** Weekly x-rays of the patient's chest are essential because the clinical improvement of the patient will occur with use of the preceding routine when it may not be accompanied by a comparable improvement in the x-ray shadows. If the patient improves clinically but the x-ray does not, it means that there is retained in the abscess cavity some thick, inspisated pus which cannot be evacuated through a bronchus. Under such circumstances it is a vain hope that the patient will be permanently cured by medical treatment and chemotherapy. A false sense of security may be obtained by the patient's reduction in cough and sputum and his feeling of general well being, but until the x-ray films are entirely clear the patient has hanging over his head the sword of Damocles, in this case in the form of recurring infection, hemoptyses, and infected emboli to the brain, kidneys and other organs. When two successive weekly x-ray films show infiltration present and unchanging, then surgery is definitely indicated.

For certain single, peripherally located abscesses in cachectic patients we still prefer the two-stage external drainage of the abscess as the safest of the surgical procedures under such circumstances. It is essential, however, that when the pleura is exposed no opening be made into the lung abscess itself unless the two pleural surfaces are firmly adhered to each other. When any doubt exists, a medicated pack is placed against the parietal pleura for a period of ten days or two weeks while conservative treatment is continued, and then the abscess is drained without contaminating the pleural cavity after adhesions have been well formed.

Other lung abscesses, especially if multiple or involving the majority of a pulmonary lobe, persisting after the original trial of medical treatment, are best extirpated by resection of the involved lobe or lobes. This is unquestionably the quickest method of restoring a pattient to full activity in the majority of cases. The mortality rate of this procedure when adequate care is taken in the pre- and postoperative periods, does not exceed three per cent, and compares favorably with gall bladder surgery. The mortality rate of lung abscess as a **disease**, when surgery is excluded from the armamentarium, exceeds twenty per cent. The patient is therefore at least six times safer when prompt surgical intervention is employed when it is indicated.

Surgical treatment of bronchiectasis and infected cystic disease consists entirely of resecting the affected lobes, segments of lobes, or in some cases the entire lung. The indications for surgery are somewhat different from those of lung abscess.

In the case of bronchiectasis it may readily be seen by pathological studies that the bronchi have permanently lost their ability to cleanse themselves. Accordingly, these bronchi are perpetually subject to reinfection at the slightest contact with pathogenic organisms. Among those patients who normally have a number of years of life yet to live, the mere presence of bronchiectasis sufficiently localized for total extirpation is an indication for operation. This need not necessarily be confined to one lung or one lobe since advanced technics permit the segmental removal of bronchiectasis from scattered areas in one or both lungs.

Those patients whose bronchiectasis is so diffuse as to preclude total extirpation are sentenced to the inconvenience and annoyance of carrying out a bronchial drainage routine day in and day out, week in and week out, year in and year out for the remainder of their lives in order to maintain any reasonable degree of health. Untreated, bronchiectasis is a fatal disease with an average life expectancy not to exceed fifteen years from the onset of symptoms. Untreated, complications make the lives of these patients unusually miserable. Asthma of a non-allergenic type is a frequent complication of bronchiectasis. Pulmonary emphysema, arthritis, kidney infection, and generalized amyloidosis are often observed. With a mortality rate for lobectomy in bronchiectasis of less than one per cent, the patient is infinitely safer in having his bronchiectasis removed than he is in carrying it with him for the rest of his life, and he is far happier to be relieved of his embarrassing cough and the necessity of following a bronchial drainage routine.

Cystic disease, whether infected or not, but especially if infected, presents considerations very similar to those in bronchiectasis. Physiologically it is difficult or impossible for a pulmonary cyst always to be kept clean and free of infection. Repeated infectious assaults render the surrounding lung parenchyma fibrotic and functionless. Accordingly, cysts and cystic disease of the lung, where sufficiently localized for complete extirpation, should be removed.

Summary

A discussion has been presented of the clinically significant pathologic findings in interstitial pneumonitis, lung abscess, infected cystic disease and bronchiectasis.

Physiologic deficiencies preventing the spontaneous elimination of infection in these conditions have been described .

It is emphasized that chemotherapy and antibiotics are not the entire answer to the problem of pulmonary suppuration, but are valuable adjuncts to the treatment which consists of well known principles of building up the patient's resistance, providing adequate bronchial drainage, and, when these measures are failing to produce rapid and continuous improvement, employment of surgery.

The low mortality rate of modern surgery in comparison with the relative high mortality rate of these suppurative diseases when surgery is excluded from consideration, is stressed.

The genius and the moron are explained by the same psychological laws. Neither has any trait which the other, also, does not in some degree possess. The highly eminent individual who is popularly called a genius may or may not be one in this sense. Very frequently, perhaps, he is. Not infrequently, however, he may be merely a person of somewhat unusual talent who was favored by time and place and a peculiar combination of circumstances that worked together to make him an outstanding figure in the history of his time or even of the world.

Esophageal Achalasia*

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Jackson, Miss.

ACHALASIA of the esophagus or cardiospasm is a fairly common condition. It is about one third as frequent as carcinoma of the esophagus and is second only to carcinoma as a cause of esophageal obstruction[1, 2]. This condition is twice as common in females as in males. All age groups are susceptible.

The etiology is unknown. Rake[3], in 1927, noted microscopic evidence of degeneration of Auerbach's plexus and believed it was the cause of the condition. Others believe that the degeneration is the result of the dilatation, inflammation and fibrosis and not the cause. Many, however, believe the condition to be due to some disturbance of the autonomic nervous system.

The gross pathological finding is a marked narrowing of the lower esophagus with varying degrees of dilatation, hypertrophy and lengthening of the esophagus above this level. The site of the obstruction is well above the cardia. Achalasia is characterized by dysphagia, regurgitation of food and retrosternal pain. Most cases give a history of dysphasia of many years duration. Regurgitation usually occurs immediately after eating but may occur at any time. Cold drinks are poorly tolerated. The symptoms of some patients bear almost a direct relationship to periods of stress and strain. Pain is noted in over half of the cases. Aspiration of material from the esophagus particularly while lying down will lead to paroxysms of coughing. Moderate to severe weight loss is usually noted. X-ray following barium swallow reveals a dilated esophagus with a smooth olive tip obstruction above the cardia (Fig. 1). The enlarged esophagus may be fusiform, flask shaped or sigmoid shaped. In the fusiform variety the esophagus is small at the cricoid and cardia with maximum dilatation midway between these two points. In the flask-shaped variety the dilatation is immediately above the cardia.

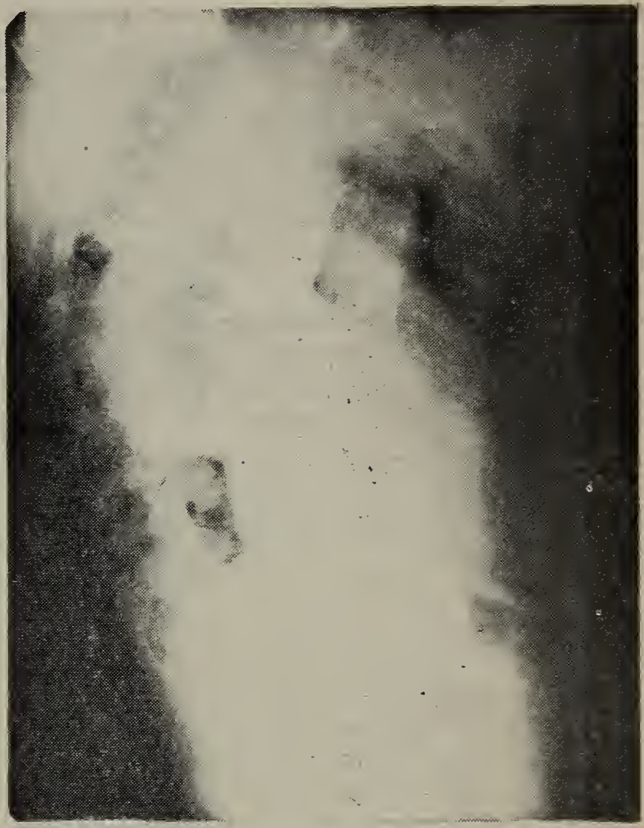

Fig. 1. X-ray made after swallowing only small amount of barium to demonstrate multiple fluid levels and olive tip obstruction.

In both of these types the cardioesophageal junction is the most dependent portion of the dilated esophagus. For this reason dilatation by hydrostatic bag dilators or other dilators is safe and as a rule effective. With elongation of the esophagus it becomes sigmoid or S-shaped. As it curls on itself the most dependent portion of the esophagus comes to rest on the diaphragm to the right and posterior to the cardioesophageal junction forming a reservoir[4]. The lengthening process may continue so that multiple reservoirs form in the chest (Fig. 1). A greatly dilated esophagus of this type may press against the tracheobronchial tree, mediastinal vessels and heart. This may produce pulmonary complications.

Treatment: Sympathectomy has been used but without uniformly good results[2]. About 70 per cent of all cases of achalasia may be relieved by one course of dilatations. Repeated dilatations are necessary for the remaining cases[4, 5]. Dilatations are relatively safe except in the advanced cases. According to Maingot, operation is necessary in about ten per cent of all cases and may be done with a low mortality rate. As Gray and Skinner[6], have pointed out it is in the sigmoid shaped cases that operation is usually found necessary.

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*Read before the Central Medical Society, Jackson, Mississippi, March 7, 1950.

Several surgical procedures for this condition have been described. In 1914 Heller described an operation which did not require opening into the esophagus. He made an anterior and a posterior longitudinal incision through the musculature of the constricted portion of the esophagus leaving the mucosa and submucosa intact. This operation is still used by a few surgeons with good results. In 1910 Wendel described the first operation for achalasia that opened into the esophagus. He made a single longitudinal incision into the lumen of the lower esophagus and continued it through the anterior wall of the stomach. The longitudinal incision was sutured transversely. Heyrovsky reported an open operation in the same year. He pulled the dilated esophagus down and made a side-to-side anastomosis with the cardia of the stomach. In 1916 Grondahl modified this operation by using a technique similar to the Finney pyloroplasty. Gray and Skinner, Scott, Clagett, Ochsner and Debakey,[7] Scheibel, and Gill[8] have discussed the use of this operation.

Operation should be done in the following:

1. Those cases who have failed to respond to repeated dilatations,
2. Those cases with marked increase length of the esophagus with sagging sections which would make dilatation under direct vision dangerous or not feasible, and
3. In those cases in which the diagnosis is in doubt.

The results of some of the reports that have appeared in the literature during the last five years are tabulated:

Author	**No. Cases**	**Results**		**Deaths**
		Good	*Poor*	
Scott	3	3	0	0
Gill	8*	8	0	0
Grimson (9)	9	8	1	0
Bell (10)	10**	10	0	0
Clagett	4	4	0	0
Schiebel	4	4	0	0
Maingot (11)	46****	41	3	2***
Sweet (12)	14	14	0	0
Kay (13)	17	17	0	0

Of 115 cases, 109 had good results, 3 of these required two operations, 4 had poor results and 2 died.

The following case is presented:

L. L., colored, male, 50 years of age, was first seen in my office on September 26, 1949. He complained of difficulty in swallowing which started insidiously in 1937. The condition became severe about a year later. He was working, became very hot and tried to drink cold water. He suddenly became unable to swallow anything. After several days a physician did a gastrostomy on him. His general health improved with gastrostomy feedings and about eight months after the operation he was able to take part of his food by mouth. Since that time he has vomited daily, most often after breakfast and supper. He has often vomited foods eaten the day before. He has been awakened frequently at night by bouts of coughing and has noted a sensation of liquids in his throat. Vomiting has relieved these attacks. There has been no history of exacerbation of symptoms with emotional stress.

Physical examination revealed a phlegmatic, poorly nourished colored male with a gastrostomy opening in the left upper quadrant of his abdomen. There was marked induration about this area. Flouroscopy with barium swallow revealed a greatly dilated sigmoid shaped esophagus partially filled with fluid. After swallowing a small amount of barium multiple fluid levels were demonstrated (Fig. 1). The patient was then given enough barium to fill the esophagus (Fig. 2). After three hours only a small amount of the barium had passed through into the stomach (Fig. 3).

The patient was admitted to the Mississippi Baptist Hospital on November 1, 1949, for an esophagogastrostomy. At that time he weighed 120 lbs. In order to clear up the esophagitis, which is usually present in those cases as a result of stasis, the esophagus was aspirated daily, (1000 cc. of fluid being obtained with the first aspiration), penicillin was given intramuscularly and sulfanilamide was given by mouth for its topical effect. During this period the patient was fed entirely by the gastrostomy tube.

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*One case required second operation. This case had a constricted area at the upper end of the anastomosis.

**Two cases had unsatisfactory results following the first operation but after the second operation they were relieved.

***One patient died of mediastinitis on the fifth postoperative day (1934). The other death (1948) was an emaciated 75 year old woman who had had dysphagia far about fifty years and only weighed 75 pounds. She died on the third postoperative day from atelectasis.

****Thirty-nine of these cases had the Heller operation.

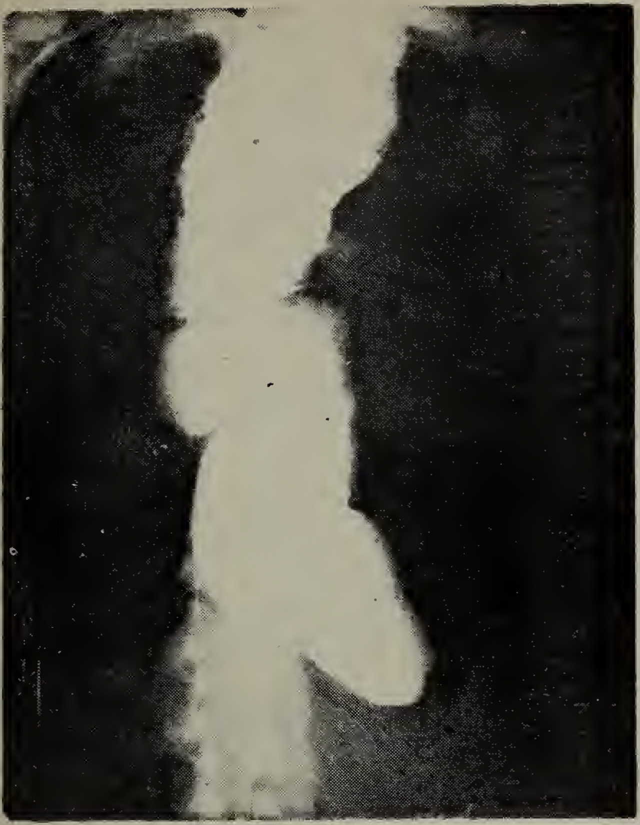

Fig. 2. Oblique view of dilated esophagus after it had been completely filled with barium.

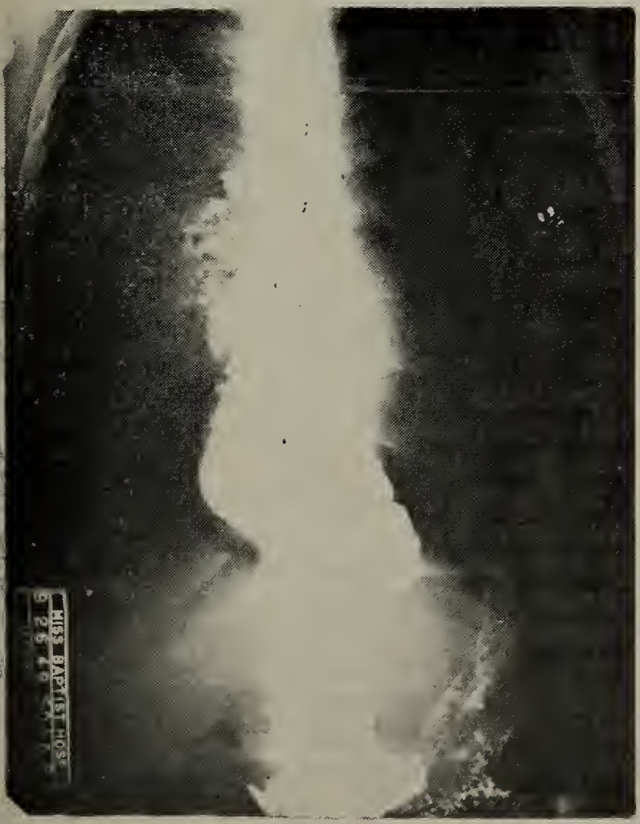

Fig. 3. X-ray taken three hours after ingestion of barium demonstrating marked retention. A small amount of barium is in the stomach. The gastrostomy tube is visible.

An esophagoscopy on November 4 revealed a greatly dilated esophagus with a mildly hyperemic mucosa. There were no ulcerative, or proliferative lesions.

On November 7 an esophagogastrostomy was performed under endotracheal anesthesia. A left upper rectus incision was made. The esophageal hiatus appeared to be of normal size but it had to be enlarged in order to pull down the greatly dilated and hypertrophic esophagus. The lower six inches of the esophagus were freed up and the dilated end was pulled down along side the cardia. The esophagus was sutured to the cardia in this position and a U-shaped incision was made passing through the constricted portion and into the dilated esophagus on one side and into the cardia on the other. The anastomosis was then performed using an inner row of catgut sutures and an outer row of fine silk. Interrupted sutures were used in both layers to insure against any possibility of a purse string effect. This particular tissue had demonstrated its tendency to become stenotic. After completion of the anastomosis the dilated esophagus was sutured to the diaphragm so that it could not retract into the chest. It was thus held down in a straightened position.

The patient's postoperative course was entirely uneventful. He was fed by the gastrostomy tube during the first few days but was able to take pureed vegetables and ground

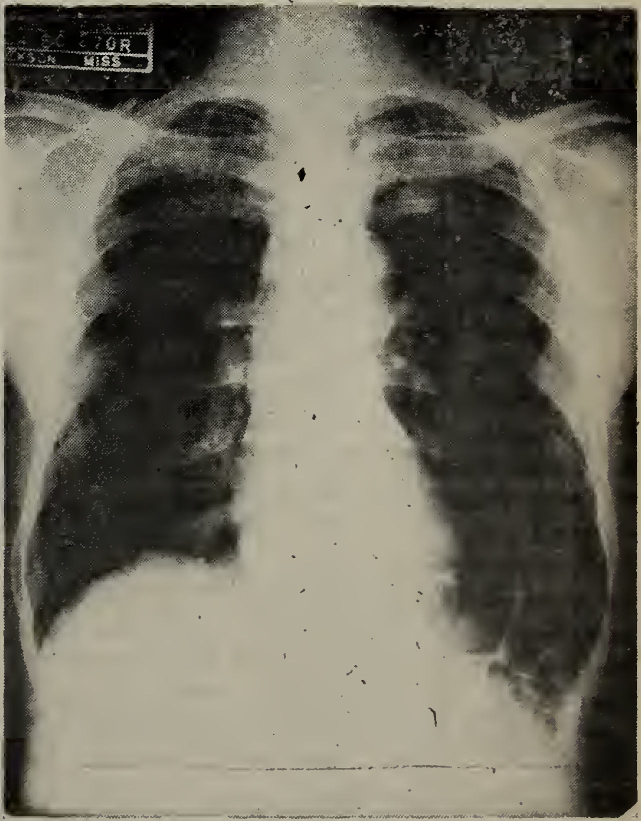

Fig. 4. Postoperative x-ray of chest made while the patient was swallowing barium. Note marked decrease in size of the esophagus.

meats by mouth on the sixth postoperative day. A barium swallow on the tenth postoperative day with flouroscopy and x-ray revealed rapid emptying through the anastomosis. Follow up studies two months and again three and a half months postoperatively showed rapid emptying of the esophagus. X-rays taken while the patient was swallowing barium revealed a marked decrease in the size of the esophagus (Fig. 4). The patient has not vomited since operation. He states that he enjoys eating now and before operation he did not enjoy any food. At present he weighs 135 pounds, having gained 15 pounds since operation.

His gastrostomy has not healed spontaneously and will probably require surgical closure.

Summary

Esophageal achalasia should be considered as a possibility in all cases of dysphagia of long standing with regurgitation of food. Most cases may be treated successfully by dilatations. A few cases require surgery. Esophagogastrostomy can be done with a low mortality rate and with good results in over ninety per cent of the cases.

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Distinguished Service Oration on Life of Dr. John Darrington

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Jackson, Miss.

THIS is an age of boasted practicability and a much vaunted efficiency; a time that places a premium upon success and discounts mere endeavor.

The world is sorely beset with industrial strife, social unrest and economic uncertainties. Individual acts are too often looked upon with the suspicion of ulterior motives; groups are many times banded together obviously for selfish purposes; nation distrusts nation and the fear of the unknown has possessed mankind with grave doubts as to what the future holds for the sons of men. "The Four Horsemen of the Apocalypse" are readying to ride again, and well may such a ride presage the Armageddon mentioned in God's Holy Word.

Men and women are so engrossed in a bread-and-butter struggle for existence that they do not realize, or do not have a proper appreciation of the axiomatic truism that there is an altruistic phase to the practice of medicine.

Medicine is older than civilization, cultivated and honored in all ages. It is powerful for good or evil, progressive in character, though unsettled in some of its basic phases. It is remunerative in fame and fortune to its successful cultivators and rich in the fruits of good conscience to its honest votaries. Encumbered as it is with difficulty, fallacy and doubt, it nevertheless does constitute one of the learned professions. It is the vocation of the cultured gentleman. It is largely represented in every community. Its imperfections, however great, are lost sight of in the overwhelming importance of its objectives. The living look to it for succor and the dying call on it for relief.

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*Annual Oration delivered at the meeting of the Mississippi State Medical Association, Jackson, Miss., May 9, 1950.

As tradition is made so is history written. Tradition is not a bad thing in itself, for it does, or should, represent the accumulated experience of generations. It does, however, become a bad thing when men cease to apply to it respectful criticism, regarding it as adequate justification for the continuance in a prescribed course, or as a fixed reason for the rejection of a new, and perhaps better, order.

"Humanity is eagerly groping towards an ever-expanding dignity. Human rights and needs are beginning to overtop all else in governmental planning. Ahead lurks danger, derived from the very fastness of the machinery of medicine. The ever increasing paternalism is leading to the loss of initiative, the dampering of incentive and the strangulation of individual enterprise and the formation of a central state, in which the individual becomes a mere clock-puncher for a government that is rapidly approaching the socialistic form."[1]

It is well to realize this is in America, the country whose people proudly sing that this is "The home of the brave and the land of the free."

It is well to remember also the warning of one of England's great statesmen, Prime Minister William Ewart Gladstone:

> "National injustice is the surest
> road to national downfall."

Medicine is a noble art, which may be defined as the healing art. It is evolved by natural processes—conceived in sympathy, born of necessity and nurtured by service.

To the good doctor,

> "Every mission constitutes a pledge to duty. He is bound to consecrate his every faculty to its fulfillment. He will derive his rule of conduct from his profound conviction of duty."

"The real work of the doctor is not in affairs of health centers or public clinics, or operating theatres, laboratories or hospital beds. Techniques have their place, but they are not medicine. The essential unit of medical practice is the occasion when in the intimacy of the consulting room or sick room, a person, who is ill or thinks himself to be ill, seeks the advice of the doctor, whom he trusts."[3]

Robert Louis Stevenson, whom we remember for such strange adventures as "Treasure Island" and the schizophrenic "Dr. Jekyl and Mr. Hide," was a sufferer from pulmonary tuberculosis, and in seeking a salubrious climate did travel over much of the known world and finally settled in Samoa. He had many doctors, and being a keen observer did study these men called upon to care for him, and was in a position to evaluate their worth, and he wrote:

> "There are men and classes of men who stand above the common herd. The soldier, the shepherd, not infrequently; the artist rarely; the physician, almost as a rule. He is the flower of our civilization and when the stage of man is done and is only to be history, he will have shared as little as any in the defects of the period and most nobly exhibited the virtues of the race. Generosity, he has, such as is possible to those who practice an art, never to those who drive a trade. Discretion tested by a hundred secrets, tried by a thousand embarrassments, and what is more important, Herculean cheerfulness."

The greatest physician of the present century, Sir William Osler, said:

> "It is a sign of a dry age, when great men of the past are held in light esteem."

Again:

> "It is the continual remembrance of a glorious past that individuals and nations find their noblest inspiration."

Posthumous glory soon sinks into forgetfulness, yet the name of a great man lives long after he has dropped into the tongueless silence of a dreamless sleep.

In 1870 in Wilkinson County, this state, there was born a boy to whom was given the name of John Darrington. He grew up with the usual trials and vicissitudes and hopes and aspirations of a country lad. With it all he had a desire to follow in the footsteps of his father, who was a successful practitioner of medicine in that county.

Knowing that there should be a proper background to the physician's life, he entered the Mississippi Agricultural and Mechanical College, now Mississippi State College at Starkville, Mississippi. From this institution in 1890 he received his Bachelor of Science degree; two years later, his Doctorate of Medicine from Tulane University; the next year he served as interne in the Charity Hospital in Natchez, Mississippi. Following his internship he located in the small community of Eden, in Yazoo County, Mississippi. Here for nearly five years he was a country doctor. Realizing that progress should characterize the successful physician, he went to New York and from the Postgraduate Medical School and Hospital he received a certificate, returning to Mississippi to locate in Yazoo City in 1898, where he continued the practice of medicine for 49 years until he was called home on May 19, 1947.

Dr. Darrington believed in organized medicine, he was a regular attendant at its stated meetings, clinics and postgraduate assemblies.

He was the founder of the first hospital in Yazoo County, Mississippi.

He had membership in many medical organizations: fellow of the American College of Surgeons, American Medical Association, Southern Medical Association; and member of Mid-South Postgraduate Medical Assembly, Southeastern Surgical Congress, and Mississippi State Medical Association.

He had every honor Mississippi medicine could give him and others of out-of-the-state organizations:

He was successfully president of the Yazoo County Medical Society, the Central Medical Society, the Mississippi State Medical Association, the Mid-South Postgraduate Assembly, and the Southeastern Surgical Congress.

For thirteen years he was a member of the Mississippi State Board of Health. The Mississippi State Board of Health is a child of the Mississippi State Medical Association. Every year the House of Delegates of the Mississippi State Medical Association nominates to the governor of Mississippi three names for the vacancy occurring on the board, and from this roster of three the governor chooses one man for the vacancy. One year when Dr. Darrington's name had been submitted to the governor it was accompanied by two other names. As it happened Dr. Darrington was not in accord with the policies of the occupant of the gubernatorial chair at that time, while the two other nominees were staunch supporters of the governor. The governor was well known for his loyalty to his political supporters, yet he by-passed friendship and renamed Dr. Darrington to the State Board of Health, because he knew that Dr. Darrington possessed the qualifications that fitted him for this place. His confidence and judgment were amply verified by the record of Dr. Darrington, who continued to serve on this board with rare understanding, a firm purpose and honest administration of affairs of this body, and was greatly instrumental in making the Mississippi State Board of Health the outstanding agency of health in this nation.

Though he practiced medicine in a small city he was never provincial but was ever cosmopolitan in thought and action. Medicine was his vocation, but like great men he did have his avocations. He was an ardent fox-hunter, and to hear him tell in his own inimitable way of sitting in his car on the side of the road and listening to the baying of his pack of beagles as they trailed the red fox made thrilling listening. He was a fisherman and his piscatorial yarns were the envy of every fisherman. It was a peculiar incident that the practice of medicine would grow rather light in Yazoo County at the same time as the winter racing season in New Orleans drew interested turf fans.

Dr. Darrington was ever the personification of friendliness. This came naturally, without affectation, fawning or hope of personal gain. He was ever calm, quiet, unhurried and the soul of honor. He was possessed with coolness and presence of mind under all circumstances —calmness amid stress and good judgment in moments of peril.

He was always the center of attraction in whatever company he did appear. He illustrated the Scotch proverb,

> "That where McGregor sits is
> the head of the table."

He was a raconteur of rare ability. The beauty of his stories was that they were utterly devoid of vulgarity and never at the expense of his friends. They were couched in chaste verbage, and always contained homely truth that made his listeners the better for their hearing.

He was as modest as a girl, but firm in his conviction, gentle in manner but strong where right and wrong were concerned. As the husband of the sweetheart of his youth he was faithful and loving. As the father of two children he was solicitous and mindful to their care and lived to see them honor the name they bear. As a citizen he was jealous of the welfare of his community, and his interest was rewarded by the citizenry choosing him as a member of the City Service Commission of Yazoo City. As a practitioner of medicine in Yazoo City for 49 years he demonstrated in and out of season that he was indeed a friend of the needy. Into the home where riches paraded in all their arrogance, into the hovel where poverty stalked with its misery, he was the same Dr. Darrington, possessed of the rare attribute of being able to show his friendship by caring for those who sought his help. When the time came for him to shift his moorings from God's footstool, he could meet this great adventure, untrammelled by regrets, unperturbed by fears, but sustained by the unsearchable riches and comforted by the eternal verities of God's Word.

Yes, his was a spirit

> "As old as life, as young as the rainbow and as eternal as time."[4]

In 1818, three years after the Battle of Waterloo, the Duc de Levis assembled the remnants of the French nobility in an effort to reestablish that branch of broken-down aristocracy. In his address he told these men and women that their plight was due to the fact that they had lost the common touch, that they had failed to realize that in the high position they occupied they owed a debt to those who were less fortunate than they. He coined the phrase "Noblesse oblige," which may be translated, "Nobility obliges one to be noble." Doctor Darrington in every walk of his life, professionally, private and officially did exemplify "Noblesse Oblige."

When that great writer of the Epistles of the New Testament was in prison in Rome he addressed one of his letters to his protegé, the young Timothy, whom he loved as if he was his son. Timothy was Bishop of Athens and was having serious trouble with the Christian church in that idolatrous city. St. Paul directed him toward the proper management of the church, and then praised him for the way he had conducted the affairs, and said "Thou art a workman that needeth not be ashamed."

Of Dr. Darrington it can also be said that he was "A workman that needeth not be ashamed."

"The span of human life at best is short,
Why count the paltry years? Their most is naught.
When measured against Eternity's amount,
A year, ten or fourscore do not count.
A myriad have been in love and hate,
Have played their parts for power and estate;
Have jingled a few coins, have exalted puny pride;
Tell me, who were they and where did they abide?
I do not know even the kings who died
In yesterday, except some vagrant pen,
By chance has willed their dim carrier to men.
If but the seed I leave behind me live and thrive,
What matter if the tree does not survive?
I have known pain, yet there were vast delights;
If dark moods have ridden across the nights,
The morns have been more resplendent for the gloom.
Man born of woman knows his doom,
Knows that he goes to join the mighty host,
That journey to the Stygian Coast.
Despot and martyr, master and slave,
Brothers and equals we meet in the grave.
Down to the tomb of all, back to the womb of all,
Thrust into the dust of our making, and then
Out of the lot of us, out of the rot of us,
Out of the crumblings of things that were men,
Draining the sweet rains and suns of spring skies,
Flowers shall blossom and new corn shall rise."

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2. Massini.
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MEDICINE—THE TARGET OF CYNICAL MEN

"Tonight I call upon every doctor in the United States, no matter how heavy the burdens of his practice may be, to dedicate himself, not only to the protection of the people's physical health, but also to the protection of our American way of life, which is the foundation of our economic health and our political freedom."

"American medicine has become the blazing focal point in a fundamental struggle which may determine whether American remains free, or whether we are to become a Socialist state, under the yoke of a government bureaucracy dominated by selfish, cynical men who believe the American people are no longer competent to care for themselves.

The Phorias in Clinical Practice*

L. D. ABERNETHY, M.D.
Jackson, Miss.

Asthenopia is the chief complaint of most patients seen by the average ophthalmologist. This means that he sees, for the most part, not a random sample or true cross section of the population but a select group, that is those having asthenopia. It might occur to some to wonder about the significance of heterophoria in association with symptoms of asthenopia; figures to answer such a query would not be immediately available in the office records of anyone in clinical practice."

The preceding excerpt from Scobee's text, **The Oculorotary Muscle,** was the stimulus for the study resulting in this paper, for three years ago I had no clear conception of the incidence or importance of the phorias in clinical practice. Existing surveys with which I was familiar were based on large groups such as army personnel without asthenopia or restricted age groups. Since then other studies have been made and reported on clinical cases, but it is hoped some significant findings will be presented.

Testing Conditions

Testing was done with a red multiple Maddox rod, using a 1 cm. light at 20 feet and an ophthalmoscope with head removed at 15 or 16 inches. In spite of the fact that Scobee has shown the red rod is slightly less accurate for distance due to the fact that the normal eye is slightly hyperopic to red and is also less accurate for near than some other tests, it was used for near and far in the interest of time. Fortunately for us all clinical practice does not require the exactitude of the research worker, and I feel that the sins of omission are greater than those of commission in medicine.

The prescription worn previously, if glasses were used constantly, was placed in the trial frame and the vertical measurements taken followed by the horizontal. Screening was not done except to help the patient appreciate the existence of two objects. The rod was routinely placed before the right eye and the switch from vertical to horizontal done by the examiner.

Method of Recording

If recording is to be done by us in practice the data must be short in the interest of space and time. To effect this I utilized the accepted abbreviations of S for esophoria, H for hyperphoria, X for exophoria at distance and added the symbol ' to denote near and combined it with the near point of convergence and accommodation, essentials in most refractions, to provide considerable information in a small space.

Slide 1 A and B

Part A. PCB: N Ho, S 1; H'R3, X'4 Ac: R 5 L 5. This then is self-explanatory except for the circle (H'R3 should have a circle around it) which serves to focus attention at subsequent examinations. Once this plan of recording is followed its absence from the record is an indication that an essential step in the examination was omitted or not recorded and on subsequent visits one never knows which.

If one or more prism diopters of hyperphoria were found at near or far the following additional testing was done.

Part B:	Fixing eye:	Distance:	Near:
	L______	______	______
	R______	______	______

The purpose of this will be referred to later.

Criterion of Clinical Significance

For several months whenever as much as ½ P D of hyperphoria was found it was measured faithfully for distance and near according to Part B above just shown, that is, first with the rod before the right and then the left eye. Gradually it was felt that this was "gilding the lily" and if I were to "get on" with turning out any work a shorter plan would have to be utilized. It is now my custom to use a one diopter loose prism for hyperphoria and if it reverses positions with the rod-light relationship there is less than one diopter present. Less than one I do not now measure.

From correlating the symptoms with the phoria findings the following amounts are considered significant not only in the prescribing but in explaining to the patient the cause of his difficulty: For the vertical measurement one P D in both distances is to be carefully appraised, this amount being more significant for near. Esophoria of four or more and exophoria of eight or more are thought to be conservative figures beyond which an excess of phoria exists. You will readily appreciate the fallacy of arbitrarily picking out a distinct point on either side of which normal or abnormal exists but if a survey is to be made such a division is necessary.

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*Read before the Section on Eye, Ear, Nose and Throat at the eighty-second annual session of the Mississippi State Medical Association, Biloxi, Miss., May 9-11, 1950.

Type of Case

Determinations were made on cases pathological and non-pathological but the former were excluded from the data. By pathological is meant conditions predisposing to disruption of fusion as corneal scars, lens opacities, retinal and optic nerve disease and deformities. Also excluded are those 15 years of age and below, not because measurements were not made but the relatively small number I felt would not provide accurate statistics. The same applies to those above 60. Also it is felt that if a phoria has not been corrected prior to this latter age it is probably not significant.

		16 Thru 30 Yrs.	% of Group	% of Total	31 Thru 45 Yrs.	% of Group	% of Total	45 Thru 60 Yrs.	% of Group	% of Total	Total No. Cases	Total Percentage
Normal		298	84	42	218	84	31	77	77	10.8	593	83
Hypephoria	R	2	0.5	0.3	4	1.5	0.5	4	4	1.5	10	1.5
	L	6	1.5	0.8	3	1.2	0.4	2	2	0.3	11	1.5
Total R & L		8	2	1.1	7	2.7	1	6	6	1.8	21	3
Eso		23	6.2	3	16	6.1	2.2	5	5	0.7	44	6
Exo		18	3.1	2.5	13	5.1	1.9	9	9	1.1	40	5.5
H & Eso		4	1	0.5	1	0.3	0.1	2	2	0.3	7	1
H & Exo		1	0.3	0.7	4	1.5	0.5	0	0	0	5	1
Total		352		48	259		37	99		21	710	100

Normal limits: Eso 4 and above, Exo 8 and above, Hyperphoria one or more both distances.

The conclusions to be drawn from this group are that in the first group (16 through 30 yrs.) normal limits are found in 87 per cent, in the second group (31 through 45) 84 per cent and in the third group (46 through 60) 77 per cent, for an average of all groups of 83 per cent. The remaining 17 per cent will be found to be divided between esophoria 6 per cent, exophoria 5.5 per cent, hyperphoria 3 per cent, hyperphoria and lateral imbalance 2 per cent. Thus 17 per cent of all non-pathological cases will show muscle balance determinations demanding a recheck, and then consideration of corrective measures.

Five per cent will be candidates for vertical prisms or further attempts to establish relationship between symptoms and objective findings. If on the recheck the same condition is found to exist one may wish to incorporate vertical prisms in the lenses or a trial clip on set.

White's writings have been summarized by Scobee to afford one a relational basis on which to prescribe the prism correction. It consists of the examination results in part B plus the determination of ocular dominance since the dominant eye exerts the innervational stimulus. It may also be used to identify the involved muscle. Ocular dominance may be established in one of several ways. The one used by me is Crider's card test, in which the card is made of plastic.

It should be emphasized that each case of hyperphoria is an individual problem, but if the amount of error corrected is that found with the dominant eye fixing in the position the eyes are to be used most this serves as a guide. It has given me some sense of security in prescribing for vertical imbalance.

BIBLIOGRAPHY

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2. Scobee and Bennett: Hyperphoria: A Statistical Study. Archives of Ophthalmology, Vol. 43 No. 3.

DISCUSSION

Dr. W. L. Hughes (Clarksdale)—Dr. Abernethy has brought us an excellent paper in a practical form about a generally neglected part of refraction. As has been shown, only a small percentage of our patients show abnormal muscle balance, but many of these patients who go from doctor to doctor seeking comfortable glasses even though they may see perfectly well with the lens they have.

I do not advocate prescribing prisms for every patient showing a little more phoria than we consider normal. In fact, I think that where the patient is having no asthenopia we should be very slow in adding prisms to his lens, even in the vertical phorias. I have seen very few satisfied patients wearing prisms constantly for a lateral deviation. However in certain types of near work they make a great difference in comfort and efficiency.

For those using a phoropter, or refractor, the test can be made rapidly since your Maddox rod and rotary prism are attached. If the patient shows a vertical phoria the rotary prism is set at 1 P. D. up or down as the case may be and swung into position and if you have a reversal you are probably within normal limits. However, for testing at 13 inches it is not so accurate since the patient is looking straight ahead instead of down at the working position and this may make a correctable difference. However, the phoropter check is so simple and rapid that it adds no appreciable time to your refraction, and if the near test shows a variation it can then be checked in the reading or working position.

I would like to call your attention to an artificially produced phoria that we are just beginning to see in Mississippi. I am speaking of the industrial worker doing very near work and particularly of the hosiery mill worker. I have seen several of these patients in the past year. They may show no phoria at the usual distance and even though you may give them almost a full correction of their hyperopia, they will not be comfortable because they are working at a distance of 8 to 10 inches for 8 hours. They usually require from 4-6D of hyperopia and 4-6P.D. of prisms (depending on the age) above their normal correction. This increases their comfort as well as their efficiency since they do not have to stop so frequently to rest their eyes.

DR. HENDERSON SCORES GOVERNMENT POLICY

In a hard-hitting inaugural in San Francisco on June 27 Dr. Elmer L. Henderson of Louisville, Kentucky, new president of the American Medical Association, charged that "the administrative arm of our government has failed us in this generation." He flatly accused "little men with a lust for power" in the executive branch of the government of seeking to make America "a Socialist state in the pathetic pattern of the socially and economically-bankrupt nations of Europe."

The Administration in Washington, asserted Dr. Henderson, is "sick with intellectual dishonesty, with avarice, with moral laxity and with reckless excesses."

That condition must be changed, he declared, "if we are to survive as a strong, free people"—and he called upon all of the American people to share the responsibility and to uphold the nation's ideals of freedom.

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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Editorials

CHRONIC ILLNESS

The American Medical Association, the American Public Health Association, the American Hospital Association, and the American Public Welfare Association have now given us another commission, the Commission on Chronic Illness. The job of the Commission is to act as a national clearing house to bring together the many separate organizations and programs dealing with chronic illness, disease, and disability. This Commission will direct research in the field of chronic illness and undertake to inform the public with the positive aspects of chronic illness.

Chronic illness is certainly of vital importance to the social and economical life of the people, even now posing a major medical problem, to challenge the medical profession, the hospital organization, public health, and society in general. A national health survey suggested in 1936 that chronic illness creates poverty. The survey revealed that 177 persons out of every thousand had chronic illness. In the age group over 65 the ratio was 407 per thousand and the highest frequency rate was among persons receiving public assistance.

In the 1930's the cause of economic dependency was unemployment. Chronic illness and old age later became the greatest cause of rising public assistance needs. But still, in 1950, with peak prosperity, chronic illness, disease and disability are weighing heavily on our national economy. More than half of the practice of the medical profession is now taken up with the people past forty-five. This class is on the increase. Dr. Andy Hall observed at our state meeting, that when Christ was born life expectancy was 21 years; at the beginning of the War Between the States, 41 years, and now it is about 68. The government and business organizations have not taken due consideration of the increased span of life. Human values in the aged have been underestimated. The relation of activity and independence to health has not yet been properly evaluated. If a man keeps mentally and physically fit he should be worth more to human society each day he lives even if he lives to be a hundred. Finding what a man is best suited to do, how much he can do, and keeping him on the job until he dies is most important in human economics. The Commission on Chronic Illness has undertaken to meet a great challenge.

NEW ADVERTISERS

We welcome to our advertising pages the General X-Ray Corporation, whose first page ad appeared in the June issue. Peerless in their field, this company has two branches in the Deep South area:

New Orleans ....1001 Camp Street
Memphis ....778 Madison Avenue

A. D. Mayo, Jr., is the representative, and may be reached at 1914 Capital St., Jackson, Miss. Telephone 3-3353.

Our readers will also note the nonprofit summer camp for diabetic children, the Sweeney Camp in Gainesville, Texas.

And two investment and insurance companies are welcomed: W. L. McCullough Investment Company, Jackson, Miss., and the Harry Carlisle Agency, representing the Mutual Benefit Health and Accident Association of Omaha, Nebraska, with offices also in Jackson, Miss.

The American Medical Association has just closed its annual session in San Francisco. Behind this fine session there are more than a hundred years of free medicine with steady progress in service to the people. Dr. Elmer Henderson of Louisville, inaugurated as president, delivered a most able address reviewing medical progress, comparing free with socialistic medicine, warning the people against regimentation in medicine and discussing the danger of state medicine to the American way of life. He reviewed the status of medical service of today and pointed to its challenge in the future.

The American Medical Association has become much more active in recent years, its vision more far reaching, and its determination to be of greater service to human society more genuine. The great challenge to the medical profession is to build health assets, physical, mental, and spiritual. The building of physical assets only is constructing less than half of the man. Since service is the measure of greatness in its true sense, the medical profession, a service organization, if it is to live, serve and remain free, must dedicate itself to building a citizenship that is adequate to meet human need in all phases. The heart and soul of medicine needs to keep step with the science of medicine. It has a great challenge in the social and economical life of the people. Prepaid insurance is fine, but medical resourcefulness must find a way to economy in sickness lest insurance rates rise to such proportions they too will be like destructive tax burdens. The answer is that the best in medicine must be given to all the people at a cost at which it can be utilized if medicine is to remain free and not be choked to death by governmental regimentation.

STATE COMMISSION ON HOSPITAL CARE

Dr. W. H. Anderson, of Booneville, (seated, second from left) was recently welcomed by the State Commission on Hospital Care as a new member. He succeeds Dr. L. Lawson Shackelford, resigned superintendent of State Hospital (mental), Whitfield. Above, seated, left to right: Carl W. Blomquist, Port Gibson; Dr. Anderson; J. O. Slaughter, Columbus, chairman; Dr. Felix J. Underwood, Jackson. Back row, left to right: Owen Cooper, Yazoo City, secretary; Dr. D. V. Galloway, Jackson, executive director; T. Harvey Hedgepeth, Jackson; Jack M. Montgomery, Inverness, and Dr. Henry Boswell, Sanatorium.

News and Comment

PRESIDENT HONORED

(The following presentation was made by Dr. Harvey F. Garrison, Sr., at the June meeting of the Central Medical Society, honoring Dr. Thompson).

Mr. President, Our Gracious Hosts, Guests and Members of the Central Medical Society:

It is my privilege and pleasure to present one of our members who has just recently received the greatest honor that the medical profession of this state can confer on one of its members. This distinguished physician was born September 8, 1902, at Carthage, Mississippi. He received his education in the schools of his home community, his B.S. Degree at the University of Mississippi in 1929 and his M.D. degree at the University of Tennessee in 1931. He interned at the U. S. Marine Hospital No. 14, New Orleans, Louisiana, 1932; was House Surgeon Mississippi State Charity Hospital 1932-34; and engaged in private practice. He was assistant superintendent of the State Charity Hospital from 1934-1935. He attended New York Post Graduate Hospital, Columbia University 1935-36. He was resident Dermatologist New York City Hospital, Welfare Island, N. Y. 1939-40. He is a diplomate of the American Board of Dermatology. He is a member of the Southern Medical Association, the AMA, the Southeastern Dermatological Society; American Academy of Dermatology and Syphilology; Investigative Society of Dermatology; Academy International of Medicine; International Who's Who in World Medicine; Rotary Club, Chamber of Commerce and the First Presbyterian Church.

He is a past treasurer, secretary and president of the Central Medical Society and past historian of the State Medical Association. He served in the U. S. Navy 1921-1925 inclusive.

Mr. President, I have the honor to present the distiguished member of this society who has brought honor to himself and to the Central Medical Society, the distinguished president-elect of the Mississippi State Medical Association—Dr. James Grant Thompson.

CONFERENCE ON CORTISONE

Dr. Tom D. Spies, Dr. Robert E. Stone, Dr. Samuel Dreizen, and other members of the staff of the Nutrition Clinic, Hillman Hospital, Birmingham, conducted on June 13, an all-day Conference on Cortisone, the first of its kind ever to be held. Some four hundred physicians attended the Conference from Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina and Tennessee.

ANNOUNCEMENT

C. Frank Yates, M.D., announces the opening of offices at 915 Madison Avenue, Memphis 3, Tennessee. Practice limited to general surgery. Telephone 38-2884.

BOOK REVIEWS

In an eclectic fashion the following books are recommended for general office use. They constitute a fair range of reference material for the busy doctor.

Medicine Throughout Antiquity, by Benjamin Lee Gordon, M.D., attending ophthalmologist to Shore Memorial Hospital, Somers Point, N. J., and to Atlantic County Hospital for Tuberculosis Diseases and Atlantic County Hospital for Mental Diseases, Northfield, N. J., and author of *The Romance of Medicine.* Published by F. A. Davis Company, Philadelphia 3, Pa. Price $6.00.

This volume is the desired answer to many questions physicians ask and are asked concerning their medical background. And, surprisingly enough, even the ancients knew about socialized medicine, specialists and quacks, and many precurosors of modern remedies. The author presents his material as from a collector's storehouse of historical facts. Medicine as it was conceived, developed, and practiced by the Assyrian, Babylonian, Hebrew, Indian, Chinese, Greek or Roman brings into this one volume a comprehensive review of man's stumbling scientific progress up until the fall of Rome in 476, A.D., when most medical histories begin.

Medicine Throughout Antiquity is absorbing, accurate, easy to read.

Harvey Cushing, Surgeon, Author, Artist, by Elizabeth H. Thomson, research assistant at the Historical Library of Yale University School of Medicine. Published by Henry Schuman, New York. Price $4.00.

This volume on the life of one of the greatest pioneers in American medicine is one of the most intimate yet distinguished biographies to be found on any of the illustrious names of the past generation. Dr. Harvey Cushing, under Miss Thomson's facile pen, becomes a personable friend, his everyday role as father, teacher, busy physician with a sense of humor and above all a brilliant mind, interpreting him with challenging delight.

The general reader will accept this book with grateful understanding. It does much to portray the imperishable concept of "a good doctor" who adheres with unyielding devotion to high professional ideals and attainment. One of the first to use x-ray, blood pressure readings, and the electric cautery in brain operations, he possessed also rare talents as artist and writer. A man renowned and beloved on three continents, Dr. Cushing's spirit and charm are captured with exquisite grace and simplicity by the author. The book will make a delightful gift.

Surgery of the Hand, by Sterling Bunnell, M.D., Honorary Member, American Academy of Orthopedic Surgeons, Members American Association of Plastic Surgeons, and American Society of Plastic and Reconstructive Surgery. Published by J. B. Lippincott ompany, Philadelphia, Pa. Price $12.00.

This book is written to serve the almost daily need of the surgeon and man in general practice. The hand is chiefly an emergency in our mechanized age, but correct handling and treatment can prevent much reconstruction later. This limb challenges the best in a surgeon's ability and demands composite application of plastic, orthopedic, and neurologic surgery. The constant occurrence of injury and infection of the hand demands that the surgeon be equipped for handling all the tissues in a limb.

Surgery of the Hand is written in the major part to treat the problems of reconstruction of the hand. With painstaking and marvelous detail the author presents first the hand as a normal member, then deals with in all phases of reconstruction—skin and flexion contracture, bones, joints, nerves, tendons, repairing losses, and the hand's relation to the arm. His methods in undertaking injuries and infections behoove the earnest consideration of the surgeon, upon whom rests the responsibility for an appalling number of hands needed for earning power. He also discusses at length congenital deformities, vasomotor conditions and tumors.

This book is practical, fully indexed, containing 734 pages and 597 illustrations .

For the physician who has for many years sought to give order and a minimum of shelf space to the general range of subjects required in his daily practice, there are three of the synopsis series published by the C. V. Mosby Company, St. Louis, that deserve his attention.

The first is **Synopsis of Psychosomatic Diagnosis and Treatment,** by Flanders Dunbar, M.D., assisted by seven eminent psychiatrists, whose contributions make the work comprehensive. This synopsis is an excellent guidebook in newer methods of diagnosis and treatment of that baffling group of patients who do not respond to any methods he has been employing.

Much of the study from which this book was compiled was done at the Columbia-Presbyterian Medical Center, New York City. Terms and methods are confined to practical use by the general practitioner, whose aim is to prevent illness, misdiagnosis, and chronic disease problems as much as to try to treat them. The author moves through his discussions of the conflict phenomena arising from the various systemic disorders, giving considerable space to metabolic and endocrine disturbances, arthritis, and other disturbances of the body. The third part is given mainly to neuroses, preventive medicine, and rehabilitation. Well worth its cost, this little book contains 501 pages, including the index.

The second is **Synopsis of Pediatrics,** a fifth edition by John Zahorsky, M.D., Professor of Pediatrics and Director of the Department of Pediatrics, St. Louis University School of Medicine, and assisted by T. S. Zahorsky.

The little book, conforming in binding to the other green fabricoid editions of the Synopsis series, rapidly takes the general practitioner through the diseases and problems posed by treating infants and children, giving the newest methods. The volume is illustrated with 158 text illustrations and 9 color plates. There are 449 pages, indexed. Price $6.50.

Oftentimes a doctor takes a survey of his library and decides that the subjects he has been able to know the least about are represented by the largest volumes. Allergy is one of these. For quick reference, clarification and simplification, **Synopsis of Allergy,** in second edition by Harry L. Alexander, M.D., Professor of Clinical Medicine, Washington University School of Medicine, St. Louis, and Editor of the **Journal of Allergy,** is an excellent choice. He includes, in addition to known advances, the antihistaminic drugs, vascular allergy, and newer concepts of the relation of allergy to infectious diseases. Price $4.50.

Interpreting Medical Literature

VA PATHOLOGY

First Admission: Patient, a 63-year-old white man, was admitted on 3-31-48 to the VA Hospital, Jackson, Miss., for observation following a laryngofissure operation for cancer with removal of the left cord and part of the right cord, performed at the Hines VAH in 1946. Physical examination revealed a well developed man with an 8" midline scar of the neck and a hoarse voice. **Pulse:** Occasional premature beats. BP: 160/98. Chest neg. There was a punctate hemorrhage in the right retina. **Urine:** Sp. gr. 1008. Alb. neg. 1-2 WBC/HPF. **CBC:** Hb. 15.5 gms.; WBC 14,800; Pol. 72, Lymph. 25, Eo. 3. **Sed. Rate** 36. **Kahn** neg. **Sputum** neg. **X-Ray:** Fibrosis right upper lung field; minimal fibrosis right apex. **Biopsy** of right cord revealed fibroma.

Second and Third Admission: Examination of larynx on 4-15-48 and 2-18-49 did not show evidence of recurrent Ca. **X-Ray** on 3-16-49: "Pulmonary Tb. right, upper lobe possibly active." Five sputum smears neg. **Urine:** Sp. gr. 1010; Alb. 1-, 2-4 RBC/HPF.

Fourth Admission: Pt. was readmitted on 5-31-49 for shortness of breath. Two weeks prior to admission he had been hospitalized elsewhere for weakness, swelling of legs, cough, hemoptysis, anorexia, and weight loss. A past history of chronic nephritis in 1919 was obtained when albumin, read and white cells, and casts in the urine and elevated BP were found. Since then, pt. claimed to have urinary findings almost constantly.

Physical examination: acutely and chronically ill, cyanotic pt. with marked pedal edema. P. 90 regular; BP. 140/100; Temp. 101°. Chest: Heart enlarged. Musical rales throughout, fine moist rales over left base post. No abdominal masses or organs palpable.

Laboratory: Urine: Sp. 1009; Alb. 2-, 1-2 RBC/HPF. **CBC:** Hb. 15 gms., WBC 11,700, Pol. 84, Lymph. 16. Sed. Rate 39. Chemistry: BUN 62.5. Serum proteins: Total 5.9, Alb. 3.2, Glob. 2.7. **Functional tests:** Fishberg concentration test did not exceed 1011. Urea clearance 30%. **Ten sputum** smears and one culture neg. for Tb. **X-Ray:** Tb. right upper lobe, probably active and pneumonitis in both cases.

Course: Pt. was placed in oxygen tent; digitalized, given mercurial diuretics and started on penicillin. He improved slightly but continued to run a low-grade temperature and to cough with occasional blood streaked sputum. The physical findings in the lung bases cleared but those in the apex persisted progressing to consolidation prior to death. Laryngoscopy and bronchoscopy were negative. EKG showed changes suggestive of an old anteroseptal infarct. Blood cultures were neg. No anemia developed and platelet counts were normal. The urinary output decreased with gradual rise of BUN to 100 and creatinine to 7 mg%.

Pt. complained also of abdominal soreness for some time. On one occasion an examiner palpated a tender mass in the left upper abdomen, but others failed to confirm this finding. An IVP and barium enema were unsatisfactory. Pt. was nauseated and continued to lose weight. The oliguria became more marked and pt. gradually lapsed into coma developing uremic frost prior to death on 9-9-49.

Abstract of Discussion

Dr. J. W. Evans interpreted the chest x-rays as pulmonary Tb., the I.V.P. as non-functioning, enlarged kidneys. Dr. J. A. Gallogly discussed the differential diagnosis of chronic glomerulonephritis and polycystic kidneys favoring the latter because of enlarged kidney shadows, while absence of hematuria would speak somewhat against it. Dr. R. G. Bolend considered urinary obstruction with back pressure possibly superimposed on chronic nephritis. Dr. J. P. Melvin, Jr., thought that renal metastases of a bronchogenic Ca. would explain many of the signs. Dr. N. Burnstein considered bilateral tuberculosis kidneys as sequelae of pulmonary Tb. Dr. J. F. Busey pointed out the discrepancy between positive x-rays and negative smears and culture for Tb.

Anatomical Diagnosis

(Hans N. Naumann, M.D.)

1. Polycystic kidneys (uremia); cystopyelitis, purulent
2. Pulmonary tuberculosis, fibrocaseous, right apex
3. Coronary occlusion, left descending branch; myocardial fibrosis; pericarditis
4. Arteriosclerosis, generalized, severe
5. Status after laryngofissure operation

Postmortem chemistry in spinal fluid. Urea: 350 mg%.

PEDIATRICS

Penicillin in the Treatment of Pre-Natal Syphilis, E. A. Morgan, Toronto, Canada, Canad. M.A.J. 61:275-78, Sept. 1949.

"In a four-year period 54 infants with pre-natal syphilis were treated—32 with penicillin alone, 9 with penicillin combined with Stovarsol and 13 with Stovarsol alone.

The dosage of penicillin varied from a low of 50,000 units per pound total dosage to a high of 550,000 units. The average total dosage was 138,000 units, which is much larger than is currently recommended. From February 1945 to October 1948 penicillin was administered every three hours but since October 1948 all cases were treated with procaine penicillin in the Out-Patient Department, 300,000 units every second day. The built-up dosage of 10,000 units and 20,000 units on successive days before giving the maximum dose of 100,000 units was used to prevent possible Herxheimer reactions.

The mortality rate in the penicillin-treated cases was 7%, in the Stovarsol-treated cases 16.6%, and in the whole series 9%. Bronchopneumonia occurred as a complication in 5 penicillin-treated cases and only one died. It occurred twice in the Stovarsol-treated cases and both died. The superiority of penicillin therapy lies in its ability to control both the syphilitic infection and the intercurrent infections which have in the past been the main cause of death. In both series all cases surviving became serologically negative in an average period of four months. Twenty-eight older children treated with penicillin doses of from 5 to 1 million units failed to show as satisfactory serologic response as did the infants. In 9 the quantitative Kahn was reduced to 4 units. A significant serologic response was much slower than in the early stage but definitely faster than with the old bismuth and arsenic routine."

COMMENT: It is my opinion that the treatment of congenital syphilis along similar lines as indicated in this article has done a great deal to lessen the death rate of these cases. Unless these cases are allowed to go into an advanced stage, there is no question about getting favorable results with this line of treatment.

HISTORIES AVAILABLE

The recently published **History of the Mississippi State Medical Association** is prepared in loose leaf form so that it can be continuously add to, with provision for a supplement every five years. At the last meeting of the Mississippi State Medical Association the price of the books was set at $2.75, to members of the Association only. Others wishing to purchase the book will be required to pay $5.00.

At present a number of copies are available, but no more will be printed after these are exhausted. Those desiring a copy may write Dr. L. T. Carl, 720 Manship Street, Jackson, Miss.

State Board of Health

Felix J. Underwood, M.D.

PREVENTABLE DISEASES CONTROL

January - June, 1940
by
A. L. Gray, Director

Acute Communicable Diseases

Since January 1, 1950, to the date of perparation of this report the usual acute communicable diseases occurred at about the same prevalence as in recent years at the same season. There were 15 cases of typhoid fever, 102 cases of diphtheria, 5 cases of typhus, 23 cases of brucellosis, and 1 case of questionable smallpox. Fifteen cases of malaria were reported, but only 2 of these were proved by finding the parasites in the blood. Investigation of these cases indicated that they were probably not malaria other than the 2 in which the parasites were found.

Although only 1,097 cases of influenza were reported in the first four months of the year by private physicians, information gathered through many sources indicates that influenza of a moderately severe type was quite prevalent over the entire state. There also seemed to be a tremendous amount of acute nausea, vomiting, and diarrhea the cause of which could not be proved bacteriologically. It is generally believed that this symptom complex was a result of a gastro-intestinal virus infection of some type.

It should be pointed out here that typhus fever has so rapidly declined in the last three or four yars as a result of control activities that only 5 cases were reported during this period, which demonstrates again the effectiveness of control activities.

Epidemiological Investigations

Epidemiological investigation of known cases and suspects was given considerable attention particularly by the Consultant Nurse, Miss Mary E. O'Connor. Leads of all types indicating the possibility of existence of certain of the diseases were followed by this nurse in conjunction with local health department nurses and private physicians. During the period the following suspected cases were studied:

Disease	No. Cases
Typhoid	37
Brucellosis	26
Typhus fever	9
Tularemia	3
Diphtheria	18
Others	17

The purpose of these investigations was to determine whether the suspected cases were actual cases and if so to find, if possible, the sources of infection for the purpose of promoting prevention of spread.

The Communicable Disease Center of the United States Public Health Service in Atlanta recently contacted the Division in regard to the possibility of accepting medical officer and nurse trainees for training in general and special epidemiology. The epidemiological program in Mississippi is the type that needs to be developed in all of the other southern states, according to the belief of officials of the Communicable Disease Center.

Venereal Disease Control

This program continued with increased intensity particularly with regard to syphilis. This is demonstrated by the fact that during the period January 1 through May 16, 1950, there were 11,439 admissions to the rapid treatment centers. These admissions consisted of previously unknown cases, partially treated cases, suspects, and cases having received adequate treatment but needing additional evaluation particularly with reference to serology and spinal fluid. Of those admitted to rapid treatment centers for evaluation, we are particularly impressed with the large number of neurosyphilis cases who had very inadequate treatment ten and fifteen years ago with the old regime of arsenic and bismuth.

Syphilis case-finding was further refined and intensified with the project blood testing and educational teams making surveys in the following counties since January 1, 1950:

County	Blood Tests Taken
Yazoo	11,343
Oktibbeha	5,951
Coahoma	18,621
Winston	4,659
Neshoba	2,968
Chickasaw	4,078
Benton	1,134
Marshall	8,911
Total	57,665

These surveys are uniformly finding that the incidence of syphilis is rapidly declining county by county, particularly in those counties where intensive programs have been carried on for several years. One disturbing finding in the surveys is the amount of congenital syphilis still in existence.

The largest survey in the state has just been completed in Coahoma County where 22,000 blood specimens were secured of which approximately 3,500 showed positive and doubtful reactions. Roughly 2,200 have already been referred to the rapid treatment center and 800 to private physicians for further evaluation and treatment of those found needing it.

In February, 1950, the United States Public Health Service made an additional allotment to the State Board of Health for case-finding. With this additional money (approximately $40,000.00) eighteen temporary investigators were employed, given a brief period of training, and assigned to various counties where the need was greatest. Their work is primarily house-to-house canvassing. Upon these visits to the homes, the worker secures blood specimens from all members of the family and does a considerable amount of family education in regard to venereal diseases. It is interesting to note that the groups being tested through this approach have a considerably higher incidence of syphilis than the groups coming to organized survey clinics and regular health department clinics. This increased activity has added tremendously to the number of cases being found.

Tuberculosis Control

During the four-month period (January 1-April 30, 1950) covered by this report one of our x-ray bus units has worked in 34 of the 82 counties of the state. (Adams, Amite, Bolivar, Choctaw, Claiborne, Coahoma, Covington, Forrest, Franklin, Hancock, Harrison, Hinds, Holmes, Humphreys, Issaquena, Jackson, Jefferson Davis, Jefferson, Jones, Lamar, Leflore, Lincoln, Lowndes, Marion, Pearl River, Pike, Pontotoc, Quitman, Sharkey, Simpson, Stone, Sunflower, Tallahatchie, Walthall, Washington, Warren, Wayne, Wilkinson, and Yazoo). These units have made a total of 9,441 films.

A total of 106,426 chest x-ray films has been reported on by the Tuberculosis Control Unit. Out of this number 337 new cases of tuberculosis were discovered. In addition to the cases of tuberculosis found, cancer, heart disease, and other significant chest diseases were discovered.

Despite a steady drop in tuberculosis mortality the number of cases of tuberculosis reported during a given period of time continues to increase. This does not mean that more cases of tuberculosis are developing now than during corresponding previous period. It simply means that Mississippi is doing a better job of finding the existing cases.

Heart Disease Control

In December, 1949, an Advisory Committee of the State Medical Association was appointed by the Association's President to work with the State Board of Health in developing a heart disease control program. This committee consists of: Dr. T. E. Wilson, Chairman; Dr. A. L. Gray, Vice-Chairman; Dr. W. W. Lake; Dr. W. K. Purks; Dr. L. J. Clark; Dr. J. G. Archer; Dr. H. H. McClanahan, Jr.; Dr. B. B. O'Mara, Ex-Officio; Dr. Felix J. Underwood, Ex-Officio. The committee held three meetings for the purpose of studying the problem and its relative importance. Among other things it has been recommended that a considerable portion of the heart disease funds available be used for professional education primarily through the seminar approach.

Case-finding has been discussed by the Committee and it has been decided that the 70 mm. x-ray films being made by the Tuberculosis Control Unit will be reviewed for evidence of heart and vascular disease by members of the Heart Committee. This approach is on a trial basis to determine the efficiency of the study of mass x-ray films in case finding. If it is productive enough, arrangements will be made for continuation of this program.

It is anticipated that the Mississippi Heart Association will soon be organized and affiliated with the American Heart Association. When it is organized it will work in conjunction with the State Board of Health and the State Medical Association through its Heart Committee.

Cancer Control

Cancer control activities have continued unabated in this semi-annual period. The service program provided clinic service for 426 patients and during the period 294 patients were given 492 days of hospitalization. Demands for service for indigent patients have continued to exceed the funds available for this service from state, federal, and society sources.

Professional education in regard to cancer received particular attention during this period with the American Cancer Society, State Board of Health, and the Subcommittee on Professional Education promoting a series of seminars in north Mississippi for physicians and dentists. These seminars were aided by the teaching staff of the University of Tennessee and the University of Mississippi Schools of Medicine. Each seminar consisted of two sessions beginning at 2:00 p.m. and continuing to 8:00 to 8:30 p.m. on each of two days at weekly intervals. The number of physicians and dentists attending the local seminars were as follows:

Tupelo	34	12
Columbus	49	9
Clarksdale	49	14
Grenada	18	6
Oxford	20	4
Greenwood	31	14
Total	207	59

The teaching program dealt particularly with the diagnosis and treatment of cancer in different sites of the body most easily observed. Physicians in general were high in their praise of these seminars.

Lay education was further expanded. There were 10 regional meetings of one day each for public health and lay workers. These were attended by 350 people most of whom were representatives of local health departments, welfare departments, agricultural extension workers, and local chapters. Every county in the state was represented at one of these meetings. Several district nurses conferences were devoted to dissemination of cancer information by workers of the State Board of Health and American Cancer Society.

It should be recalled here that the cancer program of Mississippi is a joint responsibility of the Mississippi Division of the American Cancer Society and State Board of Health each of which participated with personnel, funds, and materials.

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ISSAQUENA-SHARKEY-WARREN CITED

Members of the Issaquena-Sharkey-Warren Auxiliary are due special mention for their excellent record in the national **Hygeia** contest. Under Group III, which includes auxiliaries in every state with a membership between thirty-six and ninety-nine, this auxiliary ranked eighth in the nation in the contest, with 151 per cent increase. A bouquet to this enlightened and busy group and to our state which basks in its achievement!

Now called **Today's Health** this health magazine is one of the finest projects which our auxiliaries sponsor. It is the scientifically edited magazine for the lay reader, which is keeping up with modern trends in format and appeal.

Mrs. Stanley Hill of Corinth was the promotion chairman the past year under whose inspiration this record by the Issaquena-Sharkey-Warren group was made.

MRS. EDGAR GILES

The week following the state meeting in May the message of the untimely death of Mrs. Edgar Giles of Avalon arrived before resolutions of sympathy reached her from the executive board. Mrs. Giles was in Florida suffering from an incurable maligancy.

The expression of sympathy which went from the executive board, of which she had been a member in recent years, took the form of a contribution to the Mississippi Chapter of the American Cancer Society in her memory.

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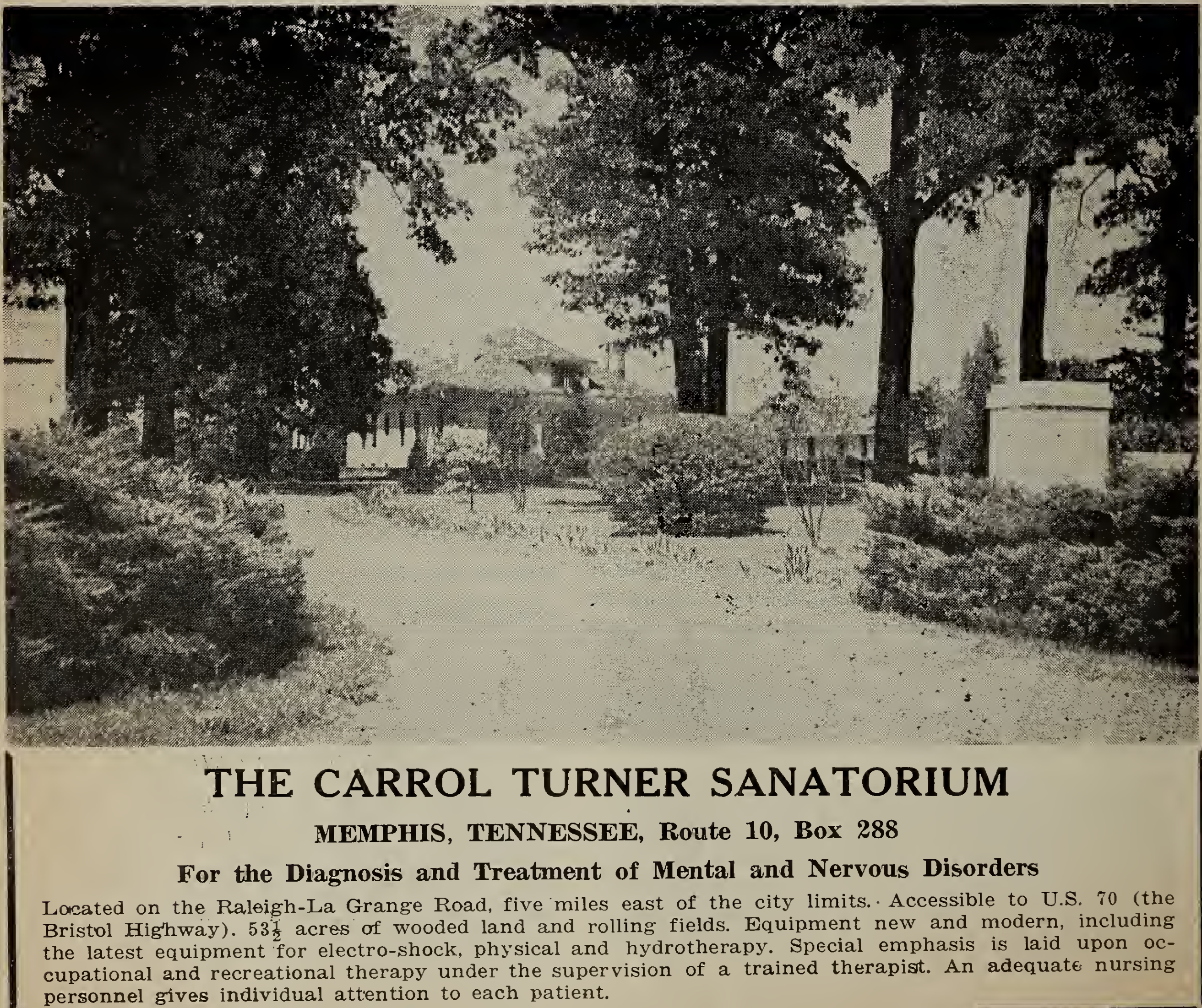

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Recent Advances in the Treatment of Burns*

T. G. BLOCKER, JR., M.D.†
Galveston, Texas

Within recent years there has been increased emphasis on the general treatment of the patient with severe extensive burns rather than upon methods of local therapy. In most medical centers materials for burn dressings have become pretty well standardized. For immediate coverage materials of choice are fine mesh grease gauze, or rayon, and saline and isotonic Dakin's solution wet dressings for infected cases. These preparations are not the perfect answer for local therapy but are the best available for routine use at the present time from a physiological standpoint. At our burn unit we employ furacin gauze for acute burns and a solution of 1:4000 zephiran and ¼ per cent acetic acid in saline for wet dressings wherever indicated. We have had no experience as yet with the local application of aluminum foil which has been advocated by Brown, Farmer, Franks, and William Johns.

For the outer covering of the burned areas pressure dressings have proved themselves to be superior to other forms of bandaging which have been yet devised. Care must be taken in their application so that pressure is evenly and uniformly distributed. To avoid lengthy tedious procedures we advocate the use of regularly scheduled periods in the operating room for changing the dressings and a burn team consisting of four members of the resident staff, two or three nurses or nurses' aides and an anesthetist to administer anesthesia to the point of analgesia only. The burn patient tolerates psychic and physical trauma poorly; painful dressings may actually be a factor in delayed wound healing. Standard burn rolls are employed which can be easily applied in a few minutes' time even to patients with extensive burns and quickly removed by flushing with a large amount of normal saline.

Immediate excision and grafting of acute third-degree burns has been advocated in selected cases by Young, Cope and Allen. This procedure is, however, rarely practical in patients with extensive burns. There is a growing tendency, however, to excise third degree burns at the time of the first dressing if they are well demarcated so that first skin grafts may be applied approximately ten to twelve days after injury. Patients so treated have a much shorter period of morbidity than those in whom separation of the slough is accomplished either spontaneously or with the aid of a chemical débriding agent. Because of the intense pain which pyruvic acid produces we have abandoned it except in patients with deep third degree burns where all the nerve endings have been destroyed.

In the application of pressure dressings it is extremely important that hands be put up in the position of function and that knee and elbow joints be maintained in extension. Both upper and lower extremities must be kept elevated to encourage good circulatory exchange and to prevent gravitational edema which impairs wound healing.

With regard to general therapy there has been a growing tendency to employ transfusions of whole blood from the beginning of treatment rather than to administer plasma for the first 24 hours. It has been demonstrated by Ham, Shen, and their co-workers that at the time of thermal injury there occurs loss of total red cells from increased fragility due to morphological changes as well as to direct destruction of cells at the burn site. In the more severe cases a large amount of free hemoglobin is present in the serum and urine and may be a factor in bringing about acute renal shutdown. The administration of whole blood initially does not augment hemoconcentration since the latter is only a relative matter and is produced as the fluid elements of the blood are rapidly lost from the circulating plasma volume. Our practice at the present time is to give patients with extensive burns one or more liters of blood during the first twelve hours, adjusting the amount and rapidity of administration according to the severity of shock. At the end of twelve hours and again at each 24 hours blood requirements are estimated on the basis of the patient's general condition and laboratory studies, particularly urinary volume and specific gravity, red count, hemoglobin, and hematocrit. Transfusions are continued as long as the hematocrit is above 50 or signs of shock are still present. Thereafter blood is given on the basis of 500 cc. daily every other day in adults to combat the development of severe anemia.

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*Read before the sixty-first annual session of the Mid-South Postgraduate Medical Assembly, Memphis, Tenn., Feb. 14-17, 1950.

†From the Department of Plastic and Maxillofacial Surgery, The University of Texas School of Medicine, Galveston, Texas.

For many years the use of oral saline-bicarbonate solutions in addition to whole blood during the shock-edema phase of acute burns has been advocated by such workers as Evans and Bigger, Abbott, McDonald, Cadman, Schudder and Lockwood. Moyer has recently emphasized the danger of water intoxication during this period and feels that nausea and cerebral disturbances formerly ascribed to burn toxemia may be avoided if ordinary drinking water is restricted for the first forty-eight hours. The solution which we employ contains 4 gm. of sodium chloride and 1.5 gm. of sodium bicarbonate per liter of distilled water; if oral intake is restricted because of vomiting, 500 cc. of Ringer's solution are given intravenously as initial fluid therapy.

The problem of burn toxemia is still a controversial one. Many workers feel that it is the result entirely of shifts of fluids from one body compartment to another. Others feel that one factor may be the disturbance of electrolytic balance which occurs as potassium is lost by injured cells and replaced by sodium with hydration of uninjured cells resulting from lowering of osmotic pressure of the extracellular fluid among normal tissues. An increase in plasma potassium may be partly responsible for characteristic toxic symptoms in the burn patient. Experimental work is in progress to study in detail the changes brought about by altered sodium: potassium relationship.

The existence of toxic substances in tissues damaged by thermal injury has been postulated by such workers as Cullumbine and others who report the existence of a polypeptide of low molecular weight, leukotaxine, which, when injected into experimental animals reproduces the typical blood picture following a severe burn. It is interesting to speculate on the position which thermal trauma assumes in the general adaptation syndrome of Hans Selye. Certainly the initial burn shock phase is characterized by the same findings which make up the alarm reaction: namely, hypothermia, hypotension, hemoconcentration, increased capillary permeability, hypochloremia, tissue catabolism, and depression of the nervous system. The pathways by which the phenomenon of stress brings about this striking syndrome are as yet unknown. We are inclined to believe that the solution may be found eventually in the tissue culture laboratory in the study of individual cell reactions to outside stimuli. Experimental work is in progress at our institution at the present time to determine the effect of high temperature on living epithelial cells **in vitro**, optimum growth factors, influence of drugs and burn extracts and other projects related to the pathology of burns and regeneration of injured epithelium.

The problem of reestablishment of nitrogen equilibrium in the burn patient is one which cannot be solved until raw surfaces are covered. In the first place, large amounts of plasma are lost by way of weeping granulations along with essential electrolytes; there are set up, also, at the time of injury certain catabolic processes associated with multiglandular derangement which are irreversible, according to the adaptation syndrome hypothesis, until the areas of full-thickness burn are grafted and the source of noxious stimuli is removed. Every effort should be directed, however, toward minimizing protein imbalance in preparations of the patient for early grafting. The use of whole blood and supplementary feeding have proved of immeasurable value in this respect. For the latter we use a whole-protein mixture containing milk, eggs, dextrose, and Protolysate, which supplies per liter 150 gm. of protein, 346 gm. of carbohydrate and 57 gm. of fat, administered by continuous drip through a small flexible plastic intranasal tube. The caliber of the tubing is that of an 18-gauge needle, which is fitted into the distal end and attached to a Murphy drip bottle apparatus; it may be left indefinitely without discomfort or irritation, and the patient may eat solid food according to appetite with the tube in place. The amount of forced feeding is calculated on the basis of two to four gm. of protein per kgm. of body weight. Recently we have devised a pump which delivers the protein mixture at a constant rate, overcoming any tendency for the tube to become clogged and allowing us to keep the solution in a vacuum bottle at a temperature low enough to prevent decomposition.

In conclusion it may be pointed out that an understanding of derangement of normal physiological processes forms the basis for progress in the treatment of patients with severe burns of all types. There is a great need for standardization of burn therapy and for the establishment of techniques of handling burned patients on a massive scale in view of the possibility of industrial catastrophes and the likelihood of large numbers of flash burns among civilian populations in the event of atomic warfare.

Obstetrical Complications*

E. LEE DORSETT, M.D., F.A.C.S.
Saint Louis, Missouri

To enumerate all of the complications arising in the practice of obstetrics would be an endless task, therefore this paper will only deal with those rarer ones that have occurred in the writer's experience within the last thirty years both in private practice and in the wards of two large public hospitals.

Many of these complications occur most unexpectedly and are oftentimes undiagnosed. Some are easily handled, while others are extremely difficult and require considerable skill in their management. The difficult cases may, through skill, terminate successfully while the simple ones may end in tragedy both to the mother and child. Complications in some instances are of our own making and we have only ourselves to blame. Some of you present may remember a paper presented by the writer of this paper entitled, "Meddlesome Midwifery," at the last meeting of the Southern Medical Association in which the author mentioned a number of complications that were of our own making.

I have divided the complications mentioned in this paper into two classes, 1) maternal, and 2) fetal. In some instances these two classes have been combined to form an even more complicated situation.

Maternal Complications

Double Uteri (a broad classification)—While this anomaly is rather rare it is surprising how often it is encountered by those of us who have an extensive clinical practice. This anomaly may be found antepartum, during labor and even overlooked, as happened in one of our cases, until the postpartum examination was made. A pregnancy is one uterus of a double uterus and in the great majority of cases will cause considerable difficulty, as the cervix of the non-pregnant uterus prevents the dilatation of the uterus containing the fetus. Seven such cases have been encountered. One mentioned above, one delivered per vaginum after a prolonged labor and a dead fetus, and five patients had Caesarean sections with live babies. All of these cases had a vaginal septum with a cervix on each side. This condition found at the prenatal examination should at once give the physician a clue to the fact of a double uterus being present but there are cases where there is no septum, yet a double uterus or a bicornate uterus may be present and the diagnosis missed or long delayed.

Sacculation of the Anterior or Posterior Lower Uterine Segment—This rather rare condition is generally the result of some previous operation upon the cervix such as an extensive conization or a Sturmdorf operation. One such case came under our observation. The patient had had a previous Gilliam ventrosuspension operation plus a rather extensive Strumdorf operation, following which she became pregnant. After a rather prolonged and protracted labor without much progress of the presenting part, a vaginal examination was made and with some difficulty the cervix was located very high in the vagina, posteriorly and with 8 cm. dilatation. The anterior uterine wall was very much thinned out and was protruding anteriorly. It was felt that an almost immediate rupture of the anterior segment was inevitable and in order to prevent such an accident, an immediate Caesarean section was performed and a living male infant delivered. The patient made an uneventful recovery. This case very well illustrates the necessity of making a vaginal examination in cases where there has been a prolonged labor. If this had not been done, there certainly would have been a rupture of the uterus with the probable loss of both mother and child.

Uterine Myomata—While the presence of fibroids in the pregnant uterus is not especially rare, the presence of such tumor at the time of pregnancy calls for judgment as to its removal during this time and the complications it may cause during pregnancy, labor or postpartum. It is only very, very rarely that a myoma should be removed during pregnancy, for should such an operation be done it will inevitably cause the woman to abort or if this does not occur, it will leave a weakened area in the uterine wall where the myoma had been removed and will cause a rupture of the uterus during labor. Such a case occurred in one of our hospitals on another service. Unless some very extenuating circumstances should arise, the woman should be allowed to continue to term and then have a Caesarean section with either a hysterectomy or a myomectomy. There have come under my observation three cases in which myomata were present in a pregnant uterus; in these three cases the patients had numerous profuse uterine hemorrhages and upon the advice of consultation, these three patients had hysterectomies and the findings justified the operation. Several cases of postpartum hemorrhages have been seen due to the presence of fibroids and one case of placenta accreta was observed where there was severe postpartum hemorrhage followed by a severe puerperal sepsis.

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*Read before the Section on Ob. and Gyn. at the eighty-second annual session of the Mississippi State Medical Association, Biloxi, Miss., May 9-11, 1950.

Ovarian Tumors—As yet we have not seen an ovarian tumor that in any way has interfered with the progress of labor but have several times removed ovarian tumors during pregnancy due to the fact that their presence was causing severe discomfort to the patient. In no instance did the operation cause the patient to abort. These tumors were either simple cysts or dermoid cysts.

Endometriosis During Pregnancy—There is no question that endometriosis is present many times where there is a pregnancy, yet its presence does not manifest itself, as no definite symptoms are present. While the condition has been found many times in our gynecological operations yet only one case was encountered on the obstetrical service. A twenty-four-year primipara, in labor about seven hours, was delivered at eleven p.m. by low forceps and episiotomy without any complication. Several hours later she began showing signs of shock and when seen by the chief of the service six hours later was in profound shock. There was no sign of ruptured uterus or of any external bleeding, but upon an abdominal examination, marked dullness was elicited in both flanks and the conclusion was free blood in the abdominal cavity. The patient was immediately taken to the operating room, transfused and the abdomen opened. There was considerable free blood in the abdominal cavity and on the posterior uterine wall there was a ragged area about six cm. in diameter that was actively bleeding. A supravaginal hysterectomy was performed but at this time we were unable to make a definite diagnosis. Three days later the report came from the pathological laboratory that this was an unusual case of endometriosis that had perforated into the posterior uterine wall, causing an erosion of the uterine wall and the blood vessels in this area, the result of which had been a massive intra-abdominal hemorrhage. There was no evidence of uterine rupture; there were numerous endometrial implants on the posterior layers of both broad ligaments and the right ovary consisted of a "chocolate" cyst.

Varicose Veins—Varicose veins are rather common in pregnant women and in most instances do not cause any difficulties either during pregnancy or during labor. These minor varicosities are present in the vulva and in the lower extremities. It so happens that marked varicosities occur in the pelvic vessels and especially in the broad ligaments. Occasionally there arises a thrombophlebitis in the vessels of the broad ligament. One such case developed at the third month of pregnancy. This occurred very suddenly when the patient was awakened at night with severe pelvic pain and pain in the left leg. Upon examination it was found that the left leg was considerably swollen and edematous and upon abdominal examination it was noted that the three months' pregnant uterus was pushed out of the pelvis, upward and to the right and almost to the level of the umbilicus. With rest in bed this condition gradually subsided, the pregnancy went to term and the patient went through an uneventful labor and was delivered of an 8½-pound living female infant. There have been cases of rupture of intra-abdominal varicosities but as yet we have not seen one.

Three cases of large vaginal hematomas have been encountered. These developed during the delivery or immediately after the delivery. The treatment has been to incise these hematomas immediately, evacuate the blood clot and tightly pack the cavity. The packing is removed in 24 to 48 hours and in all cases the cavity has closed in and healed very quickly. Under no circumstances should time be lost in trying to locate a bleeding vessel when we are dealing with one of these large vaginal hematomas as most valuable time is lost and the patient will continue to bleed and eventually begin to show sign of shock from blood loss.

Carcinoma of the Cervix in the Pregnant Uterus—Cancer of the cervix in the pregnant uterus is not as rare as one might assume and many of these cases have been overlooked and are discovered only when the disease is well advanced. One of the most unusual cases coming under our observation was a woman of twenty-seven years, pregnant for the third time. She was first seen when thirty-two weeks pregnant and through the watchfulness of one of our house staff a biopsy was taken from the cervix and the pathological report was that this was a rapid-growing carcinoma of the cervix, and to complicate the situation this woman had a four-plus Wassermann and a mild pulmonary tuberculosis. At 38 weeks she had a Caesarean section and was delivered of a living child, was given deep x-ray (transvaginal) treatment plus radium. She was also placed in one of our TB sanitaria and was reported living and well three years later. Another case was discovered postpartum and received the same treatment and was living and well two years after her delivery. There is no question that pregnancy causes most neoplasms to grow much more rapidly, and it is only by careful antepartum and postpartum examinations that are we able to make an early diagnosis of this insidious disease. Instituting early treatment only can give the patient the best chances for a cure.

Inversion of the Uterus—For a better understanding of the classification of the diagnosis of inversion of the uterus three divisions are arbitrarily made: 1) partial intravaginal inversion, 2) complete intravaginal inversion, and 3) complete extravaginal inversion.

Etiology: It is very questionable that traction on the umbilical cord following the second stage of labor is a factor in the cause of inversion of the uterus. It stands to reason that pulling on the cord will immediately lead to its detachment, but if the cord is pulled on and the placenta is more or less attached to the uterine wall as in placenta accreta, an inversion of the uterus might occur. It is much more reasonable to assume that too forcible and continued use of the Credé method when used in the expulsion of the placenta might tend to cause the uterus to invert. Personally, I would much rather remove the placenta manually than to use force on the fundus of the uterus in an attempt to expel the placenta. In numerous cases we have seen extensive bruises on the abdominal wall and hematomas on the peritoneal covering of the uterus due to the mismanagement of the Credé method. In a case that died of a general peritonitis, a ruptured intestine was found at postmortem, the rupture occurring in an attempt to expel the placenta when a loop of gut caught between the operator's hand and the fundus of the uterus.

The most plausible etiological factor in the realm of supposition is the irregular endtractions and relaxations of different groups of uterine muscles causing a sacculation of a certain area in the fundus uteri; which can be increased by squeezing on the fundus. When this sacculation does occur, the contractions and relaxations will gradually be increased and we have the same phenomenon as when the finger of a glove is turned inside out. As mentioned before, there may only be a partial inversion that can only be diagnosed by abdominal palpation where there is a crater-like depression in the fundus, or the condition may progress, the entire uterus becoming inverted and passing through the cervix and the fundus appearing in the vagina. If this happens, a prolapse of the inverted uterus takes place and we then have to deal with a complete extravaginal inversion of the uterus. In the diagnosis of this condition one of the significant symptoms is that, although there is profuse uterine bleeding, the shock is out of proportion to the blood loss.

Every case of postpartum hemorrhage should have a vaginal examination both by palpation and inspection. We have encountered several cases of postpartum hemorrhage in which an inversion of the uterus had been entirely overlooked. One patient died of shock and hemorrhage in which the diagnosis of inverted uterus had been entirely overlooked. Two cases of partial inversion were easily replaced as the cervix had not completely contracted around the inverted uterus; two cases had to have a laparotomy in which the uterus was replaced; all four cases survived. Two cases were brought into the hospital in a moribund condition and died before anything could be done. Two cases entered our service, one in which the uterus had been inverted three days and one rather unusual case in which the uterus had protruded from the vagina three weeks. One case was seen in which there was an inversion of the uterus caused by a submucous myoma. Longstanding prolapsed uterus cases can only be corrected by a hysterectomy.

Placenta Accreta — Those lesions of the placenta which include premature separation of the placenta and placenta previa, are familiar to all of us but a true placenta accreta is rather rare. This condition should not be confused with the so-called adherent placenta or trapped or retained placenta.

Etiology of Placenta Accreta—It occurs generally in women that have had one or more children, following a previous curettement or in cases having had an endometritis.

Diagnosis: The diagnosis of placenta accreta can only be made in those cases where the placenta fails to become detached from its normal location and where ordinary means have been tried to express it and we can only make sure of the diagnosis when the uterine cavity is explored, and when we attempt to peel the placenta away from the uterine wall. When it is found that there is no line of cleavage and we are unable to loosen the attached placenta, then we may be sure we are dealing with a placenta accreta.

Pathology: In this condition of the placenta there is found an absence of the decidua basalis, and the chorionic villi penetrate deep into the uterine muscularis, sometimes even beneath the peritoneal covering of the uterus. From this we can see how futile it would be to attempt to try and remove the placenta manually or by curette. In cases of placenta accreta it can be readily seen that if the placenta is firmly attached and an attempt to expel it by Credé method or cord traction that an inversion of the uterus can very easily occur.

Six cases of this condition have come under my observation: The first case was handled by me through ignorance and inexperience. A diagnosis of retained placenta had been made and an attempt was made to remove the placenta manually. As no line of cleavage was found the placenta was removed piecemeal, resulting in an almost fatal hemorrhage. Following the first attempt a curettement was done, followed by hemorrhage, as was two subsequent curettements. This patient then developed a pelvic abscess that necessitated a laparotomy but finally recovered after a prolonged stay in the hospital. The next three cases were diagnosed early and received the correct treatment, namely, a hysterectomy. Two cases were found at the time of a Caesarean section. In these cases the chorionic villi had burrowed deep into the uterine wall at the location of the old uterine scar of a previous Caesarean. It was impossible to remove the placenta without leaving portions of it in the uterus, so a supravaginal hysterectomy was performed to control the bleeding in the uterus after removing the greater portion of the placenta, a part of which was attached and buried in the old Caesarean scar.

Implication of the Pregnant Uterus—A retrodisplacement of the pregnant uterus is a rather common occurrence and in the great majority of cases will correct itself. In rare instances the impacted uterus will cause such distress that it must be replaced. This can usually be done by pressure from below. Failure may necessitate the opening of the abdomen, dislodging the impact organ and replacing it in its normal position. One such case was encountered with the later Dr. Walter B. Dorsett. This patient went to term following this operation and was delivered normally.

Pelvic Infections Occurring in Pregnancy

It would seem logical to assume that the presence of a pregnancy in the uterus would more or less block off any ascending infection or that pregnancy would not occur when infection exists. These infections, generally gonorrheal, evidently travel upward and outward through the lymphatics. Before the days of antibiotics, such a case was seen in which there was present an acute bilateral salpingo-oophoritis with bilateral pyosalpinx and, as was the custom at that date, the patient was operated upon in a more or less acute stage of the disease and both ovaries, tubes and the uterus were removed. The patient made an uneventful recovery.

Complications in Obstetrics Arising from Fetal Anomalies

The term "fetal monstrosities" should have no place in our medical nomenclature as it is a most brutal term. The term "fetal anomaly" is preferable. The subject of teratology is most complicated and very extensive in its variations and combinations and is a study in itself, generally of more interest to the embryologist than to the obstetrician. It is only when these fetal anomalies interfere with the delivery of the child and are the cause of marked dystocia, does the obstetrician pay much attention to these conditions.

The most common anomalies encountered are deformities and malformations of the fetal head, namely, hydrocephalus and anencephalus. An hydrocephalic fetus may cause extreme difficulty in a delivery, especially if there is a breech presentation present. The anencephalic child seldom causes any difficulty but in rare instances may give considerable difficulty as these babies may have unusually large shoulders; in fact this condition may go hand in hand with the cranial deformity.

There are many combinations of double anomalies, or the joining together of twins. These double anomalies generally have two heads but may have a single body. They may have two, three, and four arms; two, three or four legs or the lower extremities may be fused into one lower limb. The double anomalies are classed as the so-called Siamese Twins and strangely enough it has been my privilege to have seen four such rarities in my own city and to have handled one of these cases personally. None of these four cases were delivered alive as all were delivered per vaginum. Delivered by Caesarean section, there is no question that they would have been living today, possibly in one of our famous side shows. Fortunately, Siamese twins are exceedingly rare and when delivered through the vagina pose one of the most complicated conditions with which we have to deal. The case seen personally was very much mishandled before being sent to our service at the City Hospital; an attempt had been made to deliver the patient in the home before the complication was recognized. The patient was a para IV and when arriving at the hospital was in moderate shock hemorrhaging moderately. Upon examination a markedly cyanotic fetal head protruded from the vagina, there was present a prolapsed, nonpulsating cord and a prolapsed right arm that had a compound fracture in the upper third of the humerus, the lower fragment of which had torn an opening in the bladder six cm. long. Also present was a third degree laceration of the perineum. Before any attempt at delivery was made the patient received blood transfusions followed by marked improvement.

In all frankness, it was only after exploring the vagina and the uterine cavity that the diagnosis was determined. One head and arm as previously stated protruded from the vagina, the second head that was attached to the same trunk, lay in the right lower uterine segment and completely blocked the pelvis. To deliver from below was impossible as well as to consider a Caesarean section. As the fetus or feti were no longer alive, we decided to amputate the protruding head; enter uterine cavity and perform a very difficult internal podalic version by the Potter technique. This anomaly proved to be what is termed a thoracopagus, or a double fetus that was joined at the thorax. The union began at the stern clavicular notch and ended just above the umbilicus. As mentioned before there were two heads, also four arms and four perfectly formed lower extremities. After all of this rather complicated manipulation, the patient manifested very little shock. At a later date the vesico-vaginal fistula and the third degree laceration of the perineum were repaired with excellent results.

Impacted Breech Presentation

The delivery of a breech presentation always carries a higher fetal mortality than does the vertex presentations. There are various reasons for this statement, the two most common causes being the delivery of the aftercoming head and in those cases where there is an impacted breech presentation. We were faced with an unusually large fetus that had been dead for some time due to the prolapse of the umbilical cord. Several attempts had been made to deliver this firmly impacted breech without any success and a most ill-advised procedure—attempting to extract the breech by means of an old-fashioned hook in the groin of the child; traction had been made on this hook in the groin with the result that the hook had cut through the thigh of the fetus and completely amputated its leg from the body. When the case was seen by us the fetus was badly mutilated, but it was with some difficulty finally delivered. The child weighed eleven and three-quarters pounds.

Tumors of the Fetus

The most common type of tumors of the fetus that are present at birth and are apt to cause difficulty at the time of delivery, are those arising in the sacro-coccygeal region of the child. Two such cases have been encountered, the first delivered per vaginum, but in the second case the tumor was nearly as large as the fetus. In this case a Caesarean section was done in preference to a mutilating operation on the fetus.

Abdominal Pregnancy

An extrauterine pregnancy other than tubal is rather rare but most of us have seen a case. The diagnosis antepartum is rather difficult and sometimes overlooked, and when first seen at full term, the diagnosis can be easily missed. One such case was seen by us that had been diagnosed as a full-term normal pregnancy. This woman, a para II, was seemingly in labor and had been so for thirty-six hours. The diagnosis was missed even though a vaginal examination had revealed that there was no cervical dilatation. There was a supra-pubic mass to the left of the mid-line that was thought to be a uterine myoma. With a Caesarean section in mind, the abdomen was opened and much to our surprise, a full-term living fetus was free in the abdominal cavity. The child was removed and, as is the proper treatment in these cases, no attempt was made to remove the placenta. A second case was seen in consultation and the proper diagnosis was made, but against advice, the operator made an attempt to remove the placenta and the patient bled to death on the operating table.

Missed Abortion

The death of the fetus in utero occurs early in pregnancy as well as the last trimester. When this condition occurs in the early months of pregnancy and the products of conception are not soon expelled and the fetus remains in the uterus, the condition is known as a missed abortion. This state of affairs may continue for a number of months; one case was seen in which the fetus had remained in uterus for eleven months from the date of the last normal menstrual period.

The consensus of opinion of obstetricians is that it is much better not to interfere in these cases, as they will eventually abort. It takes considerable intestinal fortitude to hold out against the patient and her family who are insisting that the uterus be emptied. One such case illustrates this point; a patient was suspected of having a missed abortion and against the physician's better judgment and upon the stubborn insistence of her family, a small bag was inserted into the uterus with the idea of inducing an abortion of a suspected dead fetus. Great difficulty was encountered in inserting the bag and the cervix was badly lacerated. No results were produced by the bag and it was removed and an attempt was made to clean out the uterus by means of a curette but the only result was to pull down into the vagina a loop of intestine. Consultation was immediately sought and the patient taken to the operating room and the abdomen opened. To the surprise and embarrassment of all concerned a non-pregnant perforated uterus was found and what was thought to be a pregnant uterus was an ovarian cyst the size of a three-month uterus. Fortunately, the patient made a recovery after a rather stormy postoperative course due to a pelvic infection.

Conclusion

To continue to enumerate the many other obstetrical complications would only draw out this discussion indefinitely and bring in the more common complications.

To lay down hard and fast rules for the many complications that occur in obstetrics and to specify definite procedures in the handling of such cases is impossible. These complications strike suddenly and unexpectedly and while some are seen in consultation and have been somewhat mishandled, yet they occur in our own practice and we ourselves may mishandle them; I can plead guilty. When the emergencies do arise snap judgment is often imperative, and none of us are infallible or exempt from mistakes. The management of any obstetrical emergency and complication calls for good sound judgment based on education, knowledge, common sense, training, skill and experience. How few of us have all of these assets!

The nation's 1,636 blood banks are located in 951 cities in the United States. Sixty-one are located in New York City and Brooklyn, 43 in Chicago, 16 in Los Angeles and five in San Francisco.

The current inventry of whole blood is nearly 76,000 pints. About 61,300 pints are in hospital blood banks, 6,100 are in Red Cross regional blood centers and 8,100 pints in non-hospital blood banks.

Hospital blood banks issue 2.1 million pints, or 60 per cent, of the 3.5 million pints of blood used yearly. Red Cross regional blood centers issue 0.4 million pints, or 12 per cent, of the 3.5 million pints of blood used. Non-hospital blood banks issue 0.3 million pints, or 8 per cent, of the 3.5 million total.

Present Tendencies in Antibiotic Therapy*

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A SIGNIFICANT news item was the recent announcement that the city of Baltimore had closed Sydenham Hospital, its contagious disease institution, because it was three-quarters empty the year 'round. Fifteen years ago the sulfonamide drugs appeared, with penicillin ten years ago, streptomycin four years ago, and within the past two years aureomycin and chloromycetin came as major agents. Also a number of less widely used products for local application appeared, such as tyrothricin, effective against gram-positive, and bacitracin against gram-negative organisms. At this time comes announcement of a new antibiotic, terramycin, which the discoverer hopes will "attain better control of a wider spectrum of bacterial organisms than is attainable with penicillin and/or streptomycin."

The physician's concern most often now is the choice of antibiotic, since there are available effective therapeutic agents against most of the bacterial diseases, the rickettsial diseases and viral infections.

The purpose of this discussion is a summary of the current choice of agents. We may first consider two which at this time are limited in application.

Tyrothricin is of value primarily against gram-positive organisms, and can be used only by local application in the form of ointments or solutions. Its parenteral use is contraindicated, as this is said to produce severe hemolytic anemia. Bacitracin also can be used only by topical application because parenteral administration is prone to cause renal damage.

Penicillin was the first and has been the most widely used product since the advent of the sulfonamides. The physician has been confronted and confused by the almost unlimited variety of forms and trade names for penicillin products. The topical application of penicillin is of value mainly in prophylaxis against recurrence of rheumatic fever. If it is to be employed as a matter of convenience, rather than the parenteral route, its use must be confined to infections which are not life-endangering, and the oral dose must be at least five times the parenteral, in units of penicillin. Oral preparations are expensive and are not always reliable.

For parenteral use, aqueous penicillin G should be employed when it is desirable to reach high concentrations in the blood stream, for injection into the cerebrospinal fluid, into the body cavities, or when it is known that the patient is sensitive to procaine. If prolonged action is desirable, procaine penicillin G is indicated. Aqueous procaine penicillin G produces detectable blood levels for 12 to 24 hours, oily procaine penicillin G for 36 to 48 hours, and oily procaine penicillin G with 2 per cent aluminum monostearate for 72 hours. Procaine penicillin G in sesame oil, 300,000 units per cc., is the preferred form of repository penicillin, according to Herrell of the Mayo Clinic. Although this mention should appear unnecessary, it is a matter of fact that many painful nodules are encountered because of improper injection of oily penicillin. The gluteal region and not the deltoid is to be used, and the medication is to be injected deep into the upper outer quadrant of the buttock with a 2 or 2½ inch 19 or 20 gauge needle, and is not massaged afterwards.

Ordinarily 300,000 to 400,000 units of penicillin daily is sufficient but in bacteremia, subacute bacterial endocarditis and actinomycosis, one million or more units daily may be advisable.

Osteomyelitis should be treated by adequate surgery preceded and followed by penicillin therapy. It has been shown that penicillin has a definite place in the therapy of syphilis. The dosage schedule in the treatment of various forms of syphilis has been described adequately in the manuals made available through the public health organizations, but, in general, one-half to one million units daily for ten to fourteen days, with possible repetition of the course later, is the rule. Tetanus, diphtheria, and gas gangrene are inhibited by penicillin, but the use of antitoxin is still essential in these diseases. In meningococcus meningitis a combination of penicillin and sulfonamide is recommended, although the drugs are effective individually. Repository penicillin is advisable for a day or more before, and for several days after, oral or rectal surgery, as prophylaxis against endocarditis, in any individual who has organic heart disease. In contemplated transurethral surgery, it is believed that aureomycin is more effective, because the usual offending organisms, micrococcus pyogenes and streptococcus fecalis, are more suspectible to aureomycin.

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Respiratory infections due to organisms sensitive to penicillin are best treated by repository penicillin, 200,000 or 400,000 units intramuscularly daily. Pneumococcal and streptococcal pneumonia may be treated by either penicillin or one of the sulfonamides or a combination of the two. If a satisfactory clinical response has not been obtained after forty-eight to seventy-two hours, one is probably dealing with a viral infection which may respond to aureomycin, chloromycetin or terramycin.

Streptomycin first drew interest in the suppression of tuberculosis, both pulmonary and extrapulmonary. It has proved very effective as in the treatment of urinary tract infections, bacteremia due to gram-negative organisms, especially Escherichia coli and Pseudomonas aeruginosa, as well as Proteus vulgaris and Aerobacter aerogenes. It has been effective in the treatment of tularemia and plague. Reports from the Mayo Clinic regarding the treatment of acute brucellosis, or brucellosis with localizing lesions, culturally proved, recommend a combination of dihydrostreptomycin and aureomycin.

The organisms of genus Hemophilus, responsible for influenzal meningitis, pertussis and severe tracheitis, are sensitive to streptomycin. In the treatment of influenzal meningitis, streptomycin combined with sulfadiazine, and in some cases with serum therapy, is recommended.

With regard to choice between streptomycin and dihydrostreptomycin, Long, of Johns Hopkins, states that there is very little clinical difference in the over-all toxicity of streptomycin and dihydrostreptomycin. Another authority, Herrell, of the Mayor Clinic, states that dihydrostreptomycin can be administered twice as long and in amounts approximately twice the dose of original streptomycin, without producing eighth-nerve toxicity. Herrell warns, however, if one gives large doses long enough, dihydrostreptomycin can produce the same toxic effects. The usual dosage and method of administration of the two drugs is the same, an average amount being one gram per twelve hours, in a solution containing 200 mgm. per cc. of triple distilled water.

Aureomycin, known informally as "gold dust" by many patients, actually is about twice as expensive as gold, since one troy ounce retails for $75.00 and one ounce of gold is valued at $35.00. The drug is produced by culture in huge vats, as are most antibiotics. It is said that Lederle had one near disaster in the earlier days of aureomycin production, when the aureo-producing mold acquired a disease of its own. In a few hours, what had been a thriving mold colony turned into a thin, watery, non-productive liquid because of a virus invasion, and this spread through the production vats. The corps of microbiologists produced a virus resistant mold strain eventually. Such disasters were costly and made the drug expensive at the outset.

Aureomycin is usually administered orally, although preparations for parenteral and topical administration are available. It is effective in certain gram-negative as well as gram-positive infections, amebiasis and virus infections. The manufacturers state that "it would appear at this time to be the preferred antibiotic in African tick-bite fever, amebiasis, bacterial and virus-like infections of the eye, brucellosis, gram-positive infections caused by streptococci, staphylococci and pneumococci, gram-negative infections, including those caused by the coli-aerogenes group, granuloma inguinale, H. influenzae infections, lymphogranuloma venereum, pertussis, primary atypical pneumina, psittacosis, Q-fever, rickettsial-pox, Rock Mountain spotted fever, tularemia, typhus, and subacute bacterial endocarditis resistant to penicillin."

Chloramphenical, better known as chloromycetin, is a synthetic nitrobenzene crystalline antibiotic, usually given orally; it is also effective when administered rectally in infants and children. It is particularly effective against the common pathogens among the gram-negative bacilli and the rickettsial diseases. The gram-negative organisms particularly sensitive include the brucellae, members of the salmonella group and coliform bacteria. Effectiveness has been shown in atypical (viral) pneumonia, psittacosis, undulant fever, Rocky Mountain spotted fever, typhus, scrub typhus, lymphogranuloma venereum and to some degree in typhoid fever.

Undesirable side effects such as nausea, vomiting, headache, skin eruption and enteritic symptoms have been rare with chloromycetin. It appears that nausea is not being experienced as frequently with aureomycin as was the case with the earlier product, probably due to impurities encountered earlier. It was also found that gastrointestinal symptoms were lessened by reducing the dose or having the patient take a small amount of food with the dose of aureomycin. Urticaria, erythema and mucous membrane manifestations have been encountered with aureomycin Glossitis, vaginitis and anal irritation have been troublesome. Mucous membrane irritation is particularly common in female patients. The antibiotic has a profound and prolonged effect on the normal intestinal flora. The parenteral administration of vitamin B complex throughout the course of treatment has been recommended. Evidence is that estrogen deficiency may also play an important role in the vaginitis encountered during aureomycin therapy, since the administration of single parenteral doses of estrogen has been found to relieve severe vaginitis.

Herrell and his co-workers report from the Mayo Clinic:

> "It would appear that in terramycin we have an additional agent in the therapeutic armamentarium for certain infectious diseases. Terramycin appears to be a relatively nontoxic polyvalent antibiotic agent. It has a fairly wide range of antibacterial activity. Its activity is similar to that of aureomycin. The drug is fairly readily absorbed after oral administration. Preliminary clinical trials with terramycin are encouraging. Included among the conditions which have responded in a satisfactory manner are pneumonia, acute follicular tonsillitis and septic type of sore throat, as well as infections of the urinary tract."

Finally, what is the status of sulfonamide therapy? The sulfonamide drugs continue to be valuable in the treatment of bacterial infections of the urinary tract, bacillary dysentery, and meningococcal infections. They may be helpful in preventing rheumatic fever, streptococcal sore throat and meningococcal infections. We have been left somewhat in doubt as to the advantages of combinations of two or three sulfonamides, or of the value of certain new preparations of sulfonamides described as being without danger of causing crystalluria or hematuria and not requiring concomitant administration of alkalizing agents. Danger of sensitizing the patient to several sulfonamides, and the occurrence of crystalluria with the newer preparation has aroused this doubt. Sulfadiazine is probably the most widely used because of its proved value and few toxic reactions. Sulfamerazine also enjoys wide use because the interval between doses may be increased while adequate concentrations are maintained in the body.

In summary, the drug of choice in the infections which we are more likely to encounter will be named:

1. Amebic dysentery—aureomycin.
2. Bacillary dysentery—sulfadiazine.
3. Brucellosis—aureomycin or chloromycetin.
4. Coli-aerogenes infections — chloromycetin or aureomycin, equally effective; streptomycin second choice.
5. Diphtheria—Antitoxin; penicillin G will aid in reducing convalescent carrier period.
6. Gonorrhea—penicillin G.
7. Chancroid — aureomycin, chloromycetin, streptomycin.
8. Lymphogranuloma inguinale—chloromycetin or aureomycin; streptomycin less effective.
9. Lymphogranuloma venereum—aureomycin or chloromycetin.
10. Meningococcal infections—crystalline penicillin G and sulfadiazine.
11. Hemophilus infections—in meningitis due to H. influenzae, aureomycin and sulfadiazine first choice; streptomycin and sulfadiazine second.
12. Pneumococcal infections — penicillin G, aureomycin, chloromycetin, streptomycin, of choice in order named.
13. Atypical (viral) pneumonia—aureomycin or chloromycetin.
14. Rickettsial infections — chloromycetin, aureomycin.
15. Salmonella infections—chloromycetin in typhoid fever; of questionable value in food poisoning and diarrhea.
16. Syphilis—penicillin G.
17. Staphylococcal infections — penicillin G first choice; tyrothricin or bacitracin for topical use. Aureomycin second choice.
18. Streptococcus infections—penicillin G for types other than enterococcus, for which aureomycin is preferable.
19. Subacute bacterial endocarditis—penicillin with streptomycin.

In conclusion, we must remember that we have powerful allies in the array of antibiotics. We must make an intelligent choice, not only of one antibiotic, but of the best combination of antibiotics, in the face of many serious infections.

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Clinical Experiences with Childhood Poliomyelitis in 1949*

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THE purpose of this paper is to review our experiences with 194 cases which were referred to the Mercy Hospital-Street Memorial Polio Unit during 1949 as suspected cases of acute anterior poliomyelitis. Of these 194 cases, we were able to make a diagnosis of poliomyelitis in 158, and various other diagnoses in the remaining 36. These cases will be considered in further detail later on.

The most common classification of poliomyelitis now in usage is that which designates abortive, non-paralytic and paralytic types. The abortive form is defined as a symptomatically nonspecific, mild, brief illness without clinical evidence of central nervous system involvement; the non-paralytic is one in which clinical signs of central nervous system disturbance appear, but nerve cell damage is not severe enough to produce weakness or paralysis; and the paralytic type is one with definite muscle weakness or paralysis development.

Since abortive poliomyelitis by definition is a mild nonspecific infection, none of cases will be found among those referred to a poliomyelitis center. However, we are all aware that they outnumber manifest poliomyelitis by a varying ration estimated by various writers to be from 9 to 1 to several 100 to 1. Recent reports favor the latter figure. Although these cases are of major importance epidemiologically, they do not figure into the cases which require treatment at a polio center because they seldom if ever are diagnosed, only suspected.

Prior to the onset of paralysis there is little if any difference in the symptomatology and physical findings in paralytic and non-paralytic cases. In the cases which have reached our polio unit prior to the onset of paralysis, we have wished to give the family as encouraging a prognosis as possible, but have found that we were unable to predict with any degree of accuracy those which would or would not develop paralysis. The presence or absence of muscle tremors and tenderness and spasm of muscle groups other than the back muscles are suggestive but not entirely reliable. We will therefore not try to distinguish between symptomatology or clinical picture of paralytic and non-paralytic cases before the development of paralysis. It has been our practice to label those non-paralytic in which we were unable to find evidence of paralysis at the end of two weeks from the onset of the illness. Paralytic cases therefore are those in which we were able to detect some degree of paralysis, however mild, at the end of this two weeks.

The classical signs and symptoms of poliomyelitis—fever, malaise, nausea and vomiting, headache, stiff neck and back, together with an increase in cells in the spinal fluid, with or without an increase in spinal fluid protein—are too well known to deserve much discussion. Patients with the typical symptomatology are seldom, if ever, a diagnostic problem. There are many other times, however, in which the diagnosis of poliomyelitis must be considered and in which it is quite difficult to decide early in the course of the disease whether the child does or does not have poliomyelitis. As you all know, the public is quite conscious of polio and fully 50 per cent of the patients which are brought to the pediatrician or general practitioner during the summer months with an acute illness are brought through the fear of poliomyelitis. The parents have been educated in the value of early diagnosis and know the early signs to look for. This is desirable from the standpoint of control and treatment but as you also know, it puts the examining physician on the spot.

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One frequent complaint is that of a limp, which has been unaccompanied by fever or other symptoms, usually first appearing when the child gets up in the morning. The definite cause of this is quite often obscure, but one can usually say without doubt that the cause is not poliomyelitis. However, that is the first thing that flashes into the parents' mind, and that is the differential diagnosis that they ask the physician to make. Most of these are due to trauma unknown to the parents with resulting muscle soreness which will disappear if the part is kept at rest for 48 to 72 hours. In the absence of back or neck stiffness, fever, or actual weakness of the part, the diagnosis of poliomyelitis is quite unlikely and as a rule a lumbar puncture is not needed. Of course here we are speaking of office patients. All patients who are referred to the polio unit and have not had a lumbar puncture are subjected to a diagnostic puncture regardless of whether the examining physician feels the child does or does not have poliomyelitis.

Another frequent presenting complaint is that of a febrile illness with headaches. Headaches with fever cause no alarm in the winter months but seem to grow in importance as the weather grows warmer. If an obvious cause of the fever can be found and there is an absence of stiffness of the neck or back, a diagnosis of polio need not be seriously entertained. If the cause of the fever is not so obvious and there is the slightest degree of stiffness or pain on back flexion, and often this is present in only the last few degrees of flexion, then a lumbar puncture will make the diagnosis in a number of cases. This is also true in the patients who are seen with the presenting complaint of a variable amount of fever and malaise and very little positive finding on which to blame the fever. We were surprised last year by some 7 or 8 office patients with these minor complaints and a very slight degree of pain on extreme flexion of the back to find that there was an increase in their spinal fluid cell count.

With a normal spinal fluid and these symptoms with little or no findings to account for them, the diagnosis of poliomyelitis can still not be definitely ruled out. However, one can say that he does not believe that it is polio with considerably more conviction. There are a certain number of poliomyelitis cases in which there is a normal spinal fluid. However, in the absence of a typical paralysis the findings of a normal spinal fluid should make one look further in the attempt to establish another diagnosis if possible.

CHART NO. I

Cases found not to have poliomyelitis:

Acute upper respiratory infections with various suggestive symptoms	11
Legg-Perthes disease	1
Intussusception	1
Scurvy	3
Febrile convulsion (pharyngitis) with post-convulsive paralysis (transient)	1
Acute rheumatic fever	1
Guillain-Barre Syndrome	1
Tetany	1
Typhoid fever	1
Miliary tuberculosis and tuberculous meningitis	1
Acute synovitis	3
Undiagnosed (cases in which the symptoms disappeared before arrival or within 24 hours after admission and with negative findings)	9
Encephalitis of undetermined type	1

It is probably pertinent here to list the cases which were referred last summer which were found not to have poliomyelitis. There were 11 cases of acute upper respiratory infections with various symptoms which brought poliomyelitis into the differential diagnosis, one case of Legg-Perthes' disease, one case of intussusception, and there were 3 cases of scurvy. There was one post-convulsive paralysis following a febrile convulsion, the fever being due to an upper respiratory infection, one case of acute rheumatic fever, one case of vaccinia, one case of Guillain-Barre syndrome, one case of tetany, one case of typhoid fever, one case of miliary tuberculosis with tuberculous meningitis, three cases of acute synovitis, 9 cases in which no diagnosis could be made, and one encephalitis of an undetermined type.

In none of these cases was it necessary to use unusual diagnostic techniques. The diagnosis on a large number becomes obvious once it is considered. The first group of upper respiratory infections with such symptoms as mild or moderate discomfort on extreme flexion of the neck, vomiting and generalized weakness and malaise were in our experience the hardest to defferentiate due to the lack of any specific test. With these symptoms and a negative spinal fluid, the patients were kept under observation until we were certain we were not dealing with an early poliomyelitis. In none of these did paralysis occur and in the vast majority the suggestive symptoms had disappeared within 24 hours.

Legg-Perthes' disease is suspected in a child 6 to 8 years of age, who without any sign of illness develops a painless limp and a slight limitation of motion in one hip. The diagnosis is confirmed by x-ray of the involved hip.

The one case of intussusception was referred because of the arching of the back which occurred with his painful peristalsis. By the time he arrived at the polio unit he was having the current jelly stools and a mass was palpable in his abdomen, making the diagnosis obvious.

Scurvy should always be suspected in an infant 6 to 12 months of age with painful extremities. The history is usually that of an infant with increasing irritability and with marked pain on changing the diaper. They lie in a characteristic frog position. The gum signs we have not found too helpful, because most of these infants have no teeth. There is a history of little or no orange juice having been given, or as occasionally happens, the giving of orange juice which has been carefully heated before given. The diagnosis is confirmed by x-ray.

In our experience convulsions with poliomyelitis are an extremely infrequent occurrence and paralysis which first appears immediately following a convulsion is not likely to be due to poliomyelitis. If the spinal fluid is found to be normal, this makes poliomyelitis even more unlikely. These post-convulsive paralyses are transient in nature, beginning to improve within a few hours and usually completely gone in 48 hours.

The differential diagnosis of acute rheumatic fever, vaccinia, typhoid fever and tetany are infrequent problems and will not be dwelled upon.

The Guillain-Barre syndrome is characterized by a slowly progressive ascending paralysis, often following an acute infection. The muscles become tender and cramping pains and paresthesias are frequent. Sensory loss may be marked, slight or absent. Fever is usually inconspicuous, often absent. An important diagnostic feature is the marked increase in spinal fluid protein with normal or slightly increased cell count. Complete recovery usually follows a chronic course of several months duration.

Tuberculous meningitis can usually be differentiated by the slower development, perhaps the finding of pulmonary tuberculosis by x-ray and by the low sugar content of the spinal fluid and the presence of the tubercle bacillus in the spinal fluid.

We diagnosed as acute nonspecific synovitis three cases with soreness of the hip with resultant limp and with low grade or no fever. These symptoms all followed a cold by a few days and all responded to bed rest for 3 to 5 days. There were no signs of meningeal irritation and spinal punctures revealed normal spinal fluid. There is often a certain amount of muscle spasm around the involved hip in this condition.

The cases listed as undiagnosed were ones in which the symptoms had either disappeared before arrival or disappeared within 24 hours after the arrival in the hospital and who had negative physical and laboratory findings. On a few of these in this group, travel by automobile seems to have been healing. Most of these were limps unaccompanied by other symptoms and the parents would say on arrival, "Now, Doctor, this morning when he got up he couldn't walk and when we carried him to our local physician he still couldn't walk and when we got out of the car down stairs he was perfectly all right," and you look at the child and he is perfectly all right. Physical and laboratory findings were negative and nature had apparently healed the child before we had an opportunity. We do not pretend to know the cause of the limp or transient weakness in these cases. However, just as "all that wheezes is not asthma," likewise "all that limps is not polio," and in the absence of a positive spinal fluid finding a careful search for other causes will reveal it, if as in the above cases, it does not disappear before a cause is found.

CHART NO. II

Cases by Age	Paralytic	Non-Paralytic
0 to 3 months	1	0
3 to 6 months	2	0
6 to 12 months	9	1
12 to 18 months	5	1
18 to 24 months	2	1
2 to 3 years	15	5
3 to 4 years	18	6
4 to 5 years	4	5
5 to 6 years	8	2
6 to 7 years	7	4
7 to 8 years	10	7
8 to 9 years	10	5
9 to 10 years	2	7
10 to 11 years	2	3
11 to 12 years	2	4
12 to 13 years	4	3
Over 13 years	2	1

Youngest	7 weeks
Oldest	21 years

The youngest in our series of 158 cases of proven poliomyelitis was 7 weeks of age, the oldest 21 years. However, the majority of the patients were under 13 years since in the division of the acute polio cases between the two centers in Vicksburg we ordinarily receive only white cases under 13 years of age.

CHART NO. III

TOTAL CASES OF POLIO	158
Non-paralytic	55
Paralytic	103
Spinal	90
Bulbar	[illegible]
Cranial nerve	[illegible]
Respiratory center	[illegible]
Vasomotor involvement	[illegible]
Combined spinobulbar	13

Of these 158 cases, 55 were discharged as non-paralytic polio and 103 with some degree of paralysis. In other words, our ratio last year was about 2 cases of paralytic to 1 case of non-paralytic. This varies considerably from year to year and in various epidemics depending largely on the virulence of the strain and also depending to some extent upon the number of the milder non-paralytic cases which are diagnosed. Of the 103 cases of paralytic polio, 90 of these were classified as pure spinal involvement and 13 as combined spinal and bulbar involvement. Bulbar polio includes those cases with involvement of any of the cranial nerves or of the respiratory or vasomotor centers. In our group we had no recognized cases of respiratory or vasomotor center involvement, nor did we have any cases with involvement of the cranial nerves alone. The nerve most frequently involved was the 10th with the next most frequent the 7th, in each of our 13 cases in combination with some spinal involvement also.

CHART NO. IV

Treatment:	
Spinal	
Cases without respiratory embarrassment	88
Cases with involvement of the muscles of respiration	2
Combined Spinobulbar	
Cases requiring the use of the mechanical respirator	7
Cases requiring the use of a tracheotomy	7
Cases which were handled by use of posture, suction and oxygen	6
Deaths	1
(Spinobulbar with pre-existent purulent bronchitis)	
Mortality Rate**	0.63%

The treatment of the cases of spinal involvement with no respiratory embarrassment consists chiefly of bed rest, application of hot packs and supportive therapy as indicated. During the period of isolation packs are applied every hour for 12 hours, depending somewhat on the severity of the involvement. After the period of isolation the patients came under the supervision of the orthopedic department for further hot packs for relief of spasm if indicated and when necessary a long extended program of exercises, muscle re-education and bracing as necessary to prevent abnormal gait and contractures.

Treatment of the cases with respiratory embarrassment depends largely on the nature of the embarrassment. In cases with involvement only the muscles of respiration and with no bulbar involvement the mechanical respirator is of great help in the immediate treatment. We had 2 such cases.

Respiratory embarrassment in bulbar polio appears most often through involvement of the 10th nerve, producing difficulty in swallowing and the consequent pooling of mucus in the pharynx. This produces an obstructed airway and a progressive anoxia. Treatment in these cases consist, usually of keeping the patient in the head-low position and frequent suction of the pharynx. The head should be maintained in a position at least one foot lower than the feet and occasionally the feet have to be tied to the end of the bed to keep the patient from sliding out. If an airway cannot be maintained by frequent suction, then postural drainage and tracheotomy is then indicated to by-pass the mucous pool in the pharynx and also to facilitate suction of the tracheal and bronchial tree. With involvement of the respiratory center, the respiration becomes irregular and shallow. As failure of the center progresses there are increasing periods of apnea, of beginning Cheyne-Stokes respiration, confusion, delirium and coma soon appear. Treatment in these cases consists of the establishment of an adequate airway and placing the patient in an atmosphere of high oxygen content. The mortality rate on this type of involvement is extremely high. Fortunately we had no cases of this type in our series.

In our series the most frequent type of respiratory embarrassment was that produced by combined 10th nerve paralysis with difficulty in swallowing, blockage of the airway and involvement of the muscles of respiration with resulting inability to breathe. These cases require the use of the mechanical respirator and almost continuous suction to maintain the airway. In cases with severe difficulty in swallowing and involvement of the chest muscles necessitating their being placed in the mechanical respirator, an early tracheotomy adds greatly to their chances of survival. Only one tracheotomy was done in our series, but in retrospect we feel that there should have been two. Our one death occurred in a case of combined spinobulbar involvement with a pre-existent purulent bronchitis. He was treated by postural drainage, bronchoscopic aspiration and frequent pharyngeal suctions while in the respirator but we feel that his chances would have been greatly improved had a tracheotomy been done prior to placing him in the respirator. In our series we had 9 cases, 7 spinobulbar and 2 pure spinal, which required the use of the mechanical respirator and 6 cases with respiratory embarrassment which were handled by the use of posture suction and oxygen alone.

The problems involved in the institution of proper therapy in the initial stage, the so-called life saving procedures are not much greater than those encountered in removing the child from the respirator at a later date. On most of the cases a gradual weaning process can be smoothly carried out when the time is right, but in some the decision as to when to take them out and how long to leave them out becomes a difficult problem. Fear becomes an important element here as it stimulates the patient and increases his oxygen need. They come to rely quite heavily on these mechanical respirators. Reassurance can help some of these cases, but as our orthopedist has said, in most cases the patient has better cause for apprehension than we have for reassurance.

Even after the patient has been away from the respirator for weeks or months he is not out of danger because of the weak cough mechanism. Oxygenation may seem perfectly adequate and easy but with ordinary upper respiratory infections the bronchial secretion cannot be readily coughed free and the individual remains vulnerable to ordinary respiratory infections and can easily develop atelectasis, occasionally requiring bronchoscopy for relief and frequently requiring the use of the mechanical respirator again because of his lack of respiratory reserve.

Encephalitic symptoms of delirium, confusion and stupor occurred in several cases with the majority being in cases of the spinobulbar type. However, in most of these cases, on the establishment of an adequate airway and adequate exchange of air with high oxygen content, these symptoms disappear so that we felt that in the majority of cases the symptoms were due to anoxia rather than a definite encephalitic involvement by the poliomyelitis virus. In 2 or 3 cases, however, these symptoms persisted over several days with gradual clearing in spite of an adequate airway and oxygen exchange. In one of these cases an aphasia was present which persisted for 10 or 12 days.

We did not attempt a breakdown into the eventual end results of the 103 paralytic cases largely because the follow-up on them has not been long enough to establish their end results. However, a few generalizations can be made. Fully half of these have recovered to the point where if weakness can still be detected it is of such a nature as not to incapacitate the individual to any appreciable extent. Another large group, although suffering incapacitation to a greater or lesser degree, is still able to carry out ordinary activity without assistance and with only a certain amount of handicap. The smaller group which constitutes a greater problem is comprised of those in which involvement is so severe that they are unable to carry out even the simplest activity and so are a constant nursing problem. We have 5 of these cases in our Unit at the present time, 3 of whom are hold-overs of the 1949 cases.

Comment

Acute poliomyelitis as a disease is most variable as to symptoms, laboratory findings, physical signs and clinical course. We are often asked the question by our referring physicians over the state, "When should I and when should I not refer a case to the Polio Center as a suspect polio?"

I would answer that question by what has been our experience in arriving at a diagnosis. First an accurate and detailed history is of utmost importance and so often from this alone one can feel reasonably sure that he is or is not dealing with poliomyelitis. The age of the patient is sometimes helpful in the differential diagnosis when one keeps in mind some diseases that simulate poliomyelitis in that particular age group.

A thorough physical examination should be done noting particularly the evidence of neck and back pain or muscle flexion of the neck or back, or spasm of any muscle group. If laboratory facilities are available, the examination of the spinal fluid for total cell count, differential and total protein is of aid if increased. If the spinal fluid is normal, one can then observe the patient for further developments without undue risk to patient or contacts. Should, during the period of observation, the patient develop muscle weakness, then it would be wise to refer him to the Polio Centers immediately. In the case of upper extremity weakness immediate referral to Polio Centers is especially important because of the danger of respiratory involvement at any time.

In closing we would like to emphasize that we realize the limited facilities of some physicians for a differential diagnosis in some cases and also the considerable pressure brought by the family for an immediate diagnosis. We at the two Polio Centers in Vicksburg are ready at all times to receive these and aid you in your diagnosis and treatment.

Discussion

Harvey F. Garrison, Jr., M.D. (Jackson)—Doctors Jarratt and Horn are to be congratulated for their excellent summary of clinical experiences with poliomyelitis in 1949 in which they summarized the findings in 194 cases.

The differential diagnosis of polio certainly presents many problems. During the 12 years in which the Polio Clinic was maintained here in Jackson, we saw many cases that were suspected of having polio that had some other condition. However, I had much rather see 10 cases not polio early, than one not treated for several weeks.

The high frequency of this disease in the early childhood years in which children are sometimes difficult to manage and cooperate slowly, if at all, contributes a good deal to the difficulty of making an accurate diagnosis.

During the height of the polio **publicity**, it is not uncommon to see a child in the 6 to 16 year age group with plain hysteria. Some of them can certainly do a good job of simulating this disease, after hearing mama and all the neighbors discuss all the symptoms. It is probable that some of the cases Dr. Jarratt speaks of as having been "cured by the ride" have decided they have had enough attention and better act well. Children are naturally very susceptible to suggestions, especially if they have over-anxious parents. We doctors all have to be careful not to ask leading questions as they are usually answered in the affirmative.

I would like to mention two other diagnostive problems. Post diphtheritis paralysis manifested by nasal voice, regurgitation of fluids through the nose, and pharyngeal paralysis, may at first suggest a bulbar polio, but the absence of acute meningeal irritation, stiff neck and spine, with a negative spinal fluid should clear up the diagnosis. These cases usually improve rapidly also.

In some years there were many cases of encephalitis simulating polio very closely in the degree of irritability, stiff neck and spine, but never developing any paralysis. Until this disease is eliminated by some immunizing process or some new drug, it will continue to be a frequent diagnostic problem.

Dr. A. L. Gray (Jackson)—Doctors Jarratt and Horn are to be congratulated for their excellent summary of clinical experiences with poliomyelitis in 1949 in which they summarized the findings in 194 cases.

There is one point presented in their summary which is fundamental in communicable diseases in general and is illustrated well by the occurrence of poliomyelitis. You recall their analysis of cases according to severity of disease and extent of paralysis. It is now known that for every case of poliomyelitis that is diagnosable by ordinary means there are probably as many as 100 other individuals who have the virus with no symptoms resulting or with such mild symptoms that the disease would not be suspected even when studied by a physician. I would like to emphasize that this same pattern of response to other infections is fundamental in the occurrence, diagnosis, treatment, and control of these various communicable diseases. It should be kept in mind that the results of infections with most of the communicable diseases are dependent upon two quite variable factors which vary from one individual to another. These two variables are the dosage and virulence of the infecting organism and the specific and general immunity or resistance of the individual infected. With these two factors always variable from one individual to another it should be easy to see why they will produce symptomatology or lack of it just as variable as the factor which produces it. Consequently in polio as in most of the other communicable diseases, the pictures which make us diagnose the disease as polio, scarlet fever, diphtheria, etc., are only manifestations of the most severe forms of the disease.

It might be well to point out the extent of the outbreak in Mississippi last year. There was a total of 359 cases during the year 1949 in the state. The areas with the highest prevalence were northeast Mississippi (including Lowndes, Clay, Monroe, Lee, Union, Prentiss, and Tishomingo counties), the delta section of the state (particularly Washington, Sunflower, Bolivar, and Leflore counties), and Hinds and Warren counties. Only 7 of the 82 counties reported no cases and 22 counties reported only 1 case.

The age group incidence was not abnormal. There were 19 cases in the age group under 1, 137 cases in the age group 1-4, 98 cases in the age group 5-9, 45 cases in the age group 10-14, 24 cases in the age group 15-19, and 35 in the age group 20 and over.

The fatality rate of .63% for the cases reported in this series of 194 cases is remarkably low for any series of cases and reflects early diagnosis and good treatment in addition to variation of severity in different years. There were 8 deaths in the total of 359 cases in the state last year or a fatality rate of 2.2%. Hence the fatality rate for the state as a whole was over three times greater than for the group reported by Doctors Jarratt and Horn. Even a fatality rate of 2.2% is exceedingly low.

I would like to point out here the desirability and safety of admitting polio cases in all general hospitals where good pediatric and orthopedic care are available. There has been unwarranted reluctance of hospital administrators to admit polio cases as well as other communicable diseases. Facts at hand indicate that admissions for general purposes to general hospitals over the state last year probably included as many people harboring unrecognized polio virus as the total cases of recognized polio admitted to the polio centers. Every general hospital with minimum segregation facilities and having good pediatric and orthopedic staffs should become a polio center. This same principle applies to other communicable diseases. If a hospital poses as a general one, it should in fact be one.

Specialization of hospitalization for acute communicable diseases is an unjustifiable burden on those paying the bill. Transporting acutely ill patients long distances adds to the fatality when medical facilities are equal.

It is most stimulating to find that practically all of the known or suspected cases of last year were hospitalized in the polio centers primarily in Vicksburg where the best of treatment is available. We should feel encouraged when we compare this situation with that of a few years ago when the only facilities for polio care were in the home. This indicates another progressive and far-reaching step in the solution of medical problems spearheaded by activities and funds of the National Foundation.

Ophthalmological Conditions Frequently Seen in Children*

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Normal Development of the Eye

The eye at birth is relatively larger than other parts of the body. It has attained 1/3 of the volume of the adult eye at birth while the head has attained only 1/6 and the trunk only 1/20 by volume. Despite the large size of the eye at birth its inner sensitive structures are quite immature. The macular region of the retina is especially undeveloped and macular differentiation is incomplete until the age of four months. The macula is essential for fixation and not until macular differentiation is obtained will an infant have binocular fixation. Prior to the age of two months a child has rough movements in response to light, etc., and for this reason a child who appears at times to have a squint may not be a true squinter.

The cornea has a greater curvature at birth but not enough to compensate completely for a very small eye; therefore, at birth the eye is hypermetropic or farsighted.

The sclera is very thin and pigment shining through appears a bluish color. This condition is more marked in ossium fragilitas and buphthalmus.

The iris at birth is of a lighter color due to relatively small amount of pigment in the iris stroma. In blondes the iris remains blue in adult life but in brunettes the pigment accumulates after birth giving the eye a color varying from green to dark brown. The eyes that are to be dark brown show pigmentation in a few weeks but the final color of the iris may not be obtained for a year or longer.

The pupil in an infant is relatively small and dilates poorly with mydriatics and it is often necessary to use atropine solution 1 per cent in infants to dilate the pupil properly.

The lens of the infant's eye is relatively spherical.

There is no way of accurately measuring the vision of a child under two years of age. We know that a few minutes after birth the child will close the eyes to keep out bright lights; ten days after birth he will follow bright objects and at one month can perceive bright objects. After four to six months the macula is completely developed and from six months to two years the child is strengthening his binocular vision and at four and half years of age his visual power normally should be approximately 20/20. After the child is two years of age he can be taught to distinguish the letter E on a Snellen's chart and some rough approximation of vision may be obtained.

Common Eye Diseases in Childhood

It should be borne in mind that symptoms described by children or their parents should be carefully weighed and it is often difficult properly to evaluate the history. Symptoms of eye disease in children may be exhibited by the child rubbing the eyes or blinking frequently. The child's vision may be diminished as evidenced by his stumbling or bumping into objects in a room. The child may show no interest in distant objects or in games requiring good distant vision. The child may squeeze his lids in order to see more clearly. He may complain of headaches, blurred vision, double vision, burning or itching of eyes, or parents may give a history of recurrent sties.

Congenital Anomalies

These conditions will only be mentioned due to the brevity of this paper.

Ptosis, oxycephaly with papilledema and optic atrophy, ocular hypertelorism which causes a bizarre expression of the face, microphthalmus or small eyes, persistence of lenticular tunic tissue, Terry-Owens disease or retrolental fibroplasia, buphthalmus or infantile glaucoma, albinism with nystagmus, aniridia, which is absence of iris, cataracts and dislocation of lens. Amaurotic family idiocy, cerebromacular degeneration and retinitis pigmentosa.

Affections of Lids

Hordeolum or sty is an infection of the root of a cilia usually due to staphylococcus and often is found in a child whose physical condition is sub-normal. Hot compresses, removal of the infected cilia, incision of the abscess and sulfathiazole ointment to lid margins three times daily should affect a cure. It is important that general physical measures be instituted for improvement of physical condition. In very stubborn cases autogenous vaccine or a stock vaccine may be given.

A chalazion is caused by blockage of a

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*Read before the Mississippi State Pediatric Society, May 8, 1950, Jackson, Miss.

meibomian gland and causes a lump on the lid. If the lump is hard and not tender but is unsightly it should be excised through the skin. If it becomes swollen and tender it is often better to incise and curette through the conjunctival side. A fair proportion of the incised chalazia will recur. At times a chalazion can be emptied and, for the time being, cured by pressure over the gland with a small spatula and forcing open the opening on the lid margin.

Inflammation of the lid margins or blepharitis is very common in children and is a most difficult condition to cure. The condition is most often found in a person with dandruff. The condition can be improved greatly but often requires continual lid hygienic measures. The treatment consists of keeping the lid margin free of the scales by rubbing around each cilia daily with small swab of cotton or applicator and applying an ointment containing equal parts of salicylic acid 1 per cent and yellow oxide mercury 1 per cent. Treatment of the scalp for dandruff seems to have beneficial effects on the lids. At times ulcers form on the lid margins and then penicillin or sulfathiazole ointment should be used along with proper hygienic measures to the lids. Often blepharitis is accompanied with conjunctivitis. Children with blepharitis should have a refraction under cycloplegia as a refractive error can be a contributory cause.

Conjunctivitis

A. Acute infection conjunctivitis

1. Gonorrheal ophthalmia

This condition is more commonly seen in infants soon after birth and presents quite a different form of conjunctivitis from that due to gonococcic after a few months of age. In ophthalmia neonatorum, infection is from the birth canal. The incubation period is only two to three days and rarely longer than five days. This is a point in differential diagnosis from inclusion blennorrhea. The lids are markedly swollen, conjunctiva is only moderately hyperemic and there is a profuse purulent discharge. Diagnosis is made by finding the gonococci in smears. The most serious complication is ulcer of cornea which either perforates or causes extensive scarring either of which may cause loss of vision in the eye. The treatment is penicillin solution 1 cc. containing 3000 units in the eye every fifteen to thirty minutes, and at times penicillin parenterally is also used. This treatment is much more effective than silver preparation or sulfonamides which were formerly used.

2. Inclusion blennorrhea occurs in the newborn and is much less severe than gonococcus infection. It is caused by a virus and is transmitted from the maternal birth canal. Symptoms begin usually not sooner than a week after birth, are often unilateral and self limited. The condition is characterized by moderate swelling and hyperemia of the lids and some discharge but much less than is seen in gonorrheal ophthalmia. Rarely does corneal ulcer occur and treatment is frequent irrigation with a solution of penicillin.

3. Swimming pool conjunctivitis is probably caused by the same virus as inclusion blennorrhea and is transmitted from the genital tracts. Symptoms of conjunctivitis, preauricular adenopathy and folliculosis of lids comes on three to five days after exposure to the virus. No specific treatment.

4. Pneumococci conjunctivitis is often associated with a respiratory infection, is fairly common and may occur in epidemic proportions. There are often small conjunctival hemorrhages present and it runs a typical course of seven to ten days and usually no sequelae. Treatment is penicillin solution or ointment or zinc sulphate 1/8 per cent solution.

5. Koch-Weeks conjunctivitis is quite similar to pneumococci conjunctivitis and is treated the same.

6. Morax-Axenfeld conjunctivitis is characterized by involvement of inner and outer angles of the conjunctiva. Treatment is zinc sulphate solution.

7. Miscellaneous types of conjunctivitis may complicate measles, whooping cough, mumps and is very severe with diphtheria.

B. Chronic infectious conjunctivitis

1. Phlyctenular conjunctivitis is a chronic type of conjunctivitis which often recurs and is characterized by small yellowish nodules under the conjunctiva with hyperemia of conjunctival blood vessels which is often found in a child that is below par physically. Treatment is good diet, vitamins, etc.

2. Trachoma is a cause of blindness in both children and adults and is endemic in certain sections of the United States—especially occuring among people with poor sanitary hygiene. It is probably caused by a virus and is characterized in the acute stage by hyperplasia of conjunctiva especially of upper lid, beefy redness and slight discharge. After several weeks the acute stage passes into the

chronic stage of cicatrization with distortion of lid and trichiasis, and formation of a pannus of the upper portion of the cornea. Corneal ulcers may occur and cause marked impairment of vision. Treatment is with sulphonamides but it is doubtful if the condition is ever completely cured.

C. Noninfectious conjunctivitis

1. Vernal catarrh is a low grade chronic conjunctivitis due to an allergic manifestation and is occasionally associated with hay fever, asthma, etc. It is usually bilateral, has a sticky, ropy discharge, lymphoid hyperplasia which resembles cobblestones. The mucous discharge contains a high percentage of eosinophils. The patient complains of intense itching of the lids which is most marked during the hot season of the year. In colored children the limbal type is more common and is characterized by infiltration at limbus. The condition has a tendency to improve in later life. Treatment is with cold irrigations and a solution of monohydrated sodium 1 per cent in alcohol by drops. The latter solution aids in removing the thick tenacious strings of mucus.

2. Xerophthalmia is characterized by abnormal dryness of the eyes which results in conjunctivitis and keratinization of cornea. It is a rare disease and occurs in vitamin A deficiency. It is encountered in cases of pancreatic fibrosis.

In a paper of this length it is impossible to discuss diseases of the cornea, sclera, choroid, retina, optic nerve, etc., which are not uncommon in children, but are less common than conjunctivitis, refractive errors and strabismus.

Refractive Errors

The three main types of refractive errors are hyperopia or farsightedness, myopia or near-sightedness and astigmatism which may be hyperopic or myopic in type. Practically all infants are hyperopic when born and most of them become emmetropic within a few years, although some remain hyperopic and others develop myopia often before the age of fourteen.

A hyperopic eye is one that is too short for its refractive apparatus and thus the rays of light hit behind the retina. A convex lens is needed to focus these rays on the retina. A myopic eye is one that is too long for its refractive apparatus and thus needs a concave lens to focus the rays on the retina. An astigmatic eye is one that the refractive apparatus varies in its different meridians and needs a cyclindrical lens to focus all rays on the retina. In an infant the refractive error can be accurately found with a retinoscopic examination and glasses prescribed. One is often impressed by the fact that children eighteen to twenty-four months of age with high refractive errors will wear their glasses with very little trouble and often with very little breakage. Even a child this age often realizes that glasses make him see so much better that he easily becomes satisfied with them. Children with high degrees of hyperopia often have an accompanying convergent strabismus due to the children over converging as they try to accomodate from their hyperopia and for this reason many eyes in cases of small degrees of convergent strabismus are held straight with proper glasses. If a child becomes myopic or nearsighted before the age of twelve the chances are that the condition will progress and will often result in a very near-sighted adult. Near-sightedness has a tendency to stop this progression in most instances when the person gets into the twenties. I feel in a myopic child that glasses should be worn for close work and of necessity when wishing to see distant objects but the child does not have to wear glasses all of the waking hours. These children should have their vision tested every six months and the proper glasses would be worn. We feel that excessive close work has a deleterious effect on these children and, whereas, it is necessary for the child to get an education other types of close work should be avoided as much as possible. Refraction without a cyloplegic in a child is valueless.

Strabismus

The two main types of squint are: a) concomitant in which the visual axis of the two eyes deviate the same amount in all directions of gaze and b) paralytic in which the visual axis deviates different amounts and the angle of deviation is greater in the normal field of action of the paralyzed muscle.

Concomitant squint is much the more common type and the convergent type is most frequently seen. In convergent squint the visual axes of the eyes cross and the child is cross-eyed. Many of these convergent cases are farsighted and glasses in some cases will hold the eyes straight and will be of benefit in many other cases. If glasses do not correct the condition; surgery is indicated and this should be followed by orthoptic training. The combination of glasses, surgery and orthoptic exercises give excellent results in the majority of convergent squint cases.

Divergent concomitant strabismus is less commonly seen and many of these children are myopic. The results with these cases are not as satisfactory as in the convergent cases and surgery is more often necessitated.

Hypertropia is a condition in which the visual axis of one eye is higher than the other. Sometimes prisms placed in the glasses will aid but more often surgery is indicated.

If after glasses and orthoptic training has been tried without enough benefit, surgery should be resorted to before the child is six years of age as the macula is fully developed by this age and results are better than if one waits.

THE DOCTOR CENSUS

The 1950 edition of the American Medical Directory, edited by Frank V. Cargill, of the A. M. A. Headquarters Staff, is just off the press. It shows a healthy growth of the physician population, a trifle above 11.5% in eight years.

The new directory shows that the physicians of the United States are in the following classifications: 72,550 are in general practice, and 22,976 are in general practice but give some attention to a specialty; 54,891 limit their practice to a specialty; 12,536 are in federal government service; 9,700 are retired or in fields not related to medicine; 3,737 are in administrative, editorial or other executive positions related to medicine; and 24,887 are interns, resident physicians or full-time physicians in hospitals.

The previous directory, issued in 1942, listed the number of physicians in the United States as 180,496. In the 1950 edition the number is 201,277, an increase of 20,781 and an average yearly gain of 2,598 during the last eight years.

California leads in the number gained, with 16,668 physicians in 1950 as compared with 12,365 in 1942, an increase of 4,303. New York State shows a gain of 2,284; Texas, 772, Pennsylvania, 704; Florida, 634; and Massachusetts, 603.

Among the 24 largest cities in the United States, New York City (including Boston) is first in physician population with 17,915 an increase of 1,244 since 1942. Chicago is second with 7,477, a gain of 294; Philadelphia is third with 4,894, an increase of 649; Los Angeles is fourth with 4,183, a gain of 811, and Boston is fifth with 3,388, a gain of 454.

In 1940 there were 175,163 doctors, and the new directory shows an increase of 26,114 for the decade,. a percentage growth of a little more than 14.9. The year 1949 shows a net increase in the physician population of the contiguous continental territory of the United States of 2,236, the total number of new licentiates being 5,836 and the deaths 3,600.

SMOKING AND LUNG CANCER

In recent years a definite total and percentage increase in bronchopulmonary cancer has been noted by the profession. Several theories have been advanced as to the cause, among them tobacco smoking and the use of tar in road building. Heretofore the statistics as to tobacco have been rather contradictory, but two articles in the May 27 Journal of the American Medical Association suggest a significant relationship.

Excessive and prolonged use of tobacco, especially cigarets, seems to be an important factor in causing cancer which originates in the lungs, Ernest L. Wynder, B. A., and Dr. Evarts A. Graham of Washington University School of Medicine and Barnes Hospital, St. Louis, conclude.

Among 605 men with lung cancer, 96.5 per cent were moderately heavy to chain smokers for many years, compared with 73.7 per cent among the 780 men in the general hospital population without cancer, the St. Louis doctors point out. Among the cancer group, 51.2 per cent were excessive or chain smokers compared to 19.1 per cent in the general hospital group. "In general, it appears that the less a person smokes the less are the chances of cancer of the lung developing and the more heavily a person smokes the greater are his chances of becoming affected with this disease," they say.

Smokers were classified on the basis of number of cigarets smoked per day for 20 years or more. Pipe and cigar smokers were included by counting one cigar as five cigarets and one pipeful as two and a half cigarets. Light smokers were classified as smoking one to nine cigarets, moderately heavy smokers 10 to 15, heavy smokers from 16 to 20, excessive smokers 21 to 34 and chain smokers 35 or more.

—West Virginia Medical Journal

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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Editorials

We deeply regret the untimely going of Dr. Roy R. Kracke, dean of the Medical College of Alabama. Alabama is our beloved sister state. It had a hard task getting a four-year medical school, but we think everything considered it has done mighty well. We think Alabama is on the way with one of our very best and most practical medical schools. We feel sure that Dr. Kracke rendered a fine service in bringing this about. The people of our state who have been most interested in a four-year medical school feel a deep interest in the Alabama school and are very grateful for the aid Dr. Kracke gave us in getting our school on the way. His discussion at the forum just before our bill was to come before the legislature was most able, effective, and unanswerable. We acknowledge gratitude for his good neighborly service.

We shall miss his wise counsel, but both schools must go forward. In Birmingham he leaves medical spirits who will continue to hold aloft the torch. Dr. Seale Harris, the embodiment of the spirit of Southern medicine, each day is more worthily recognized for his incomparable contribution to the profession. Dr. Tom Spies is making the Birmingham group known world-wide through his research work. And then there are the Drs. Dabney and Douglas and others well and favorably known to help hold the focus on medical progress to this section.

COST OF MEDICAL CARE

At the recent meeting of the American Medical Association a resolution was passed asking the Association to make a study of the cost of medical care, separating this cost into four divisions: the physicians' service, hospital service, nurses' services, and druggists' services. This request we think is a wise one.

Medical service has been greatly improved, but the people are asking for more medical service and they want the best. The best is good human economy. However, the cost of medical care naturally increases with the cost of other things, and has now reached a level too high for many people in the lower or middle brackets of income. Prepaid insurance is being looked to in the main as the answer. This is very fine because it spreads out the cost and it pays best when one doesn't have to use it. If one does not have to use it, another person is helped. But evenso this solution will be short lived, for eventually the price of insurance must go up with the cost of medical care.

When the A.M.A. investigation is made it will be seen that the service of the doctor is very reasonable in the main compared with other costs. The urgent need is for better medical service for less cost, which is not at all impossible. The small hospital in a rural community trying to operate like the large one in New York is a mistake. The high cost of medical care can better be handled on the local level. A farm community can supply its hospital largely with food that is surplus, a sensible member of the family oftentimes can stay in the room with the patient, saving twenty-five dollars a day, and the patient will get well just the same. Plain pot liquor can be prescribed by the doctor for the baby rather than expensive, labeled preparations. David whipped Goliath with his little sling shot. Medicine should be put down to a reasonable price and doctors should try their best to give value received if it does take an hour or two over time. The medical profession has too great a mission not to do better than others. It will take the united effort of doctor, nurse, pharmacist and biological house to keep us out of regimentation in medicine, but it is worth the effort and more. Perhaps in the investigation it would be well to compare medical care prices with the money spent for other commodities. Good medical care is good human economy.

News and Comment

PAUL DeKRUIF HONOR GUEST AT SPIES LUNCHEON

A luncheon given Monday, July 17, at the Mountain Brook Country Club by Mr. Hugh Comer of the Avondale Mills, Birmingham, and Dr. Tom D. Spies, Nutrition Clinic, Hillman Hospital, Birmingham, and head of the Department of Nutrition and Metabolism, Northwestern University School of Medicine, Chicago, was shared by more than one hundred professional, business and industrial leaders and other guests, chiefly from Birmingham.

Dr. Paul DeKruif, Holland, Michigan, made the principal address. Nationally known for his books and articles on medical subjects, Dr. DeKruif is chairman of the Spies Clinic for Clinical Research. Also, as one of the editors of **Reader's Digest**, he is interested in presenting the significance of the Hillman Hospital group's work to the lay public. His tribute to Dr. Spies and his co-workers was a tribute to free medicine and to the incommensurable contribution it represents, as opposed to a state-limited program.

Mr. Arthur Baldwin, attorney and philanthropist of Cleveland, Ohio, made a short talk, assuring the group assembled that the Spies Clinic for Clinical Research, of which he is president, will continue its work in Birmingham. Mr. Baldwin is also a member of the board of trustees of Western Reserve University, Cleveland.

Hon. Cooper Green, mayor of Birmingham, welcomed the guests. Mr. Comer presided informally and with affable manner.

CONFERENCE ON CORTISONE

Dr. Tom D. Spies, Dr. Robert E. Stone, Dr. Samuel Dreizen, and other members of the staff of the Nutrition Clinic, Hillman Hospital, Birmingham, conducted on June 13, an all-day conference on cortisone, **the first of its kind ever to be held.** Some four hundred physicians attended the conference from Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina and Tennessee.

At this time the fundamental chemistry, physiology, pharmacology, and pathology were presented. Patients with arthritis, gout, spondylitis, acute rheumatic fever, disseminated lupus erythematosus, psoriasis, leukemia, Hodgkin's disease, malignancy, asthma and other allergies who have been treated with ACTH or cortisone were shown. The balances of diet, sodium chloride, proteins, etc., were discussed, and the toxic reactions described. Some patients with naturally-occurring hyperadrenalism were shown and some with insufficient adrenalism. Actual demonstrations of methods of administration, therapeutic indications and contraindications were included in this extraordinary clinic.

Merck and Company furnished free of charge the cortisone acetate which was used for this educational program for the profession.

Among those who attended from Mississippi were: Drs. Charles T. Berry and Frank Acree, Greenville; Drs. Thomas R. Beech, Robert T. McLaurin, D. W. McLean, and J. H. Swartzfager, Jr., Laurel; Dr. J. M. Blount, Jr., Union; Dr. H. P. Boswell, New Albany; Drs. Lehmann H. Bounds, R. L. Donald, S. C. Ferguson, Ellis L. St. Germain, and Guy T. Vise, Meridian; Drs. Andrew J. Carroll, Jr., and H. Grady Cook, Hattiesburg; Drs. George Edmonston, C. G. Huggins, Calvin S. Stubblefield, and L. L. Sulya, University; Drs. Boyd C. Edwards and W. C. Thompson, Jackson; Dr. D. J. Geraci, Gulfport; Dr. B. B. Harper, Itta Bena; Drs. Preston S. Herring, A. Street, Vicksburg; Drs. H. H. McClanahan and Thomas Wolford, Columbus; Dr. W. H. Mosby, Collins; Dr. Ellis D. Parker, Amory; Drs. Jack H. Phillips and Thomas Purser, Jr., McComb; Dr. J. H. Stephens, Booneville; Dr. Edward A. Thorne, Holly Springs; Dr. B. Z. Welch, Biloxi; and Dr. D. T. Wilson, Louisville.

ANNOUNCEMENTS

William Gail Riley, M.D., announces the opening of offices and association with Franklin Gail Riley, M.D., Riley Hospital, Meridian, Mississippi. Practice limited to pediatrics.

Bland W. Cannon, M.D., announces the opening of his office at 1092 Madison Avenue, Memphis 3, Tennessee. Practice limited to neurological surgery.

William Milton Adams, M.D., announces the association of Lorenzo H. Adams, M.D., in the practice of plastic and reconstructive surgery, 902 Madison Avenue, Memphis, Tennessee.

Fred C. Wallace, M.D., announces the opening of his office, practice limited to diseases of the eye, at the Methodist Hospital Doctors Building, Memphis, Tennessee.

Dr. John L. Shaw announces the association of Dr. Hubert K. Turley, Jr., for the practice of urology and urological surgery, Shaw-Turley Clinic, Suite 309-18, Baptist Hospital Annex, 899 Madison Avenue, Memphis, Tennessee.

FOR SALE

Physician's Office Equipment:

- Spencer Microscope (like new)
- Ophthalmoscope and Retinoscope
- Electric Nose and Throat Diagnostic Instrument
- Blood Pressure Instrument
- Sterilizers, one large and one small
- Burdick Infra-red Light
- Burdick Ultraviolet Light
- Fischer Diathermy
- Fischer Galvanic Cautery

Please write or call Mrs. W. G. Berry, 111 Galvez Street, Jackson, Mississippi.

DEATHS

DR. W. J. GILLESPIE

Dr. William John Gillespie, 81, died in late April at the family residence, 703 Gillespie Street, Jackson, following a long illness.

Dr. Gillespie was born and reared in Jackson, but as a young man he moved away and practiced medicine in Carroll and DeSoto counties for a number of years. He was a graduate of Tulane Medical School.

He retired from the medical profession in 1931 at which time he returned to Jackson and has made his home since that date.

His sister, Mrs. Frances Carnahan of 703 Gillespie Street, is his sole survivor.

DR. E. L. FULLER

Dr. E. L. Fuller, 70, physician of Greenville, died at the Baptist Hospital in Memphis June 7.

Funeral services were held at Greenville with burial in Kosciusko cemetery.

He leaves his wife and three daughters, Mrs. Hugh Johnson, Clarksdale; Mrs. James Parham, Kansas City, Mo., and Miss Adelaide Fuller, Greenville.

Dr. Fuller was a graduate of the University of Tennessee, Memphis.

DR. C. T. BURT

Funeral services for Dr. Charles T. Burt, 80, were held June 3 from Williams' Funeral home. Dr. Norman W. Cox, pastor of the First Baptist Church, of which Dr. Burt was a member, officiated. Interment was in Magnolia cemetery.

"Lily of the Valley" and "Rock of Ages" were sung by Miss Charmaine Bosarge during the services. Mrs. Valerye Bosarge played a number of organ selections.

Dr. Burt, a native of Quitman and graduate of the School of Medicine at the University of Tennessee, came to Meridian in 1923. He served as city physician for 16 years.

He is survived by his wife; daughter, Mrs. Ben L. Lindsey, Vicksburg; five nieces, Mesdames Horace Williams, Enterprise; Hubert Covington, Laurel; Willie Phillips, Stonewall; J. T. Crawford, Quitamn; A. J. Ivy, Sylacauga, Ala.; two nephews, Edwin and Ernest Burt, Quitman; several great nieces and nephews.

DR. JOHN E. McDILL

Funeral services for Dr. John Eldon McDill, 61, prominent Jackson physician and diagnostician, were held July 6 in Jackson.

Dr. J. Moody McDill, pastor of the Fondren Presbyterian Church, and Dr. W. Douglas Hudgins, pastor of the First Baptist Church, officiated, both paying high tribute to the distinguished doctor and bringing words of comfort to the family.

Dr. McDill was a native of Sunflower County, but had practiced medicine in Jackson for 30 years. For many years he was associated with the late Dr. L. B. Neal in a diagnostic clinic in the Lamar Life Building. Dr. McDill was considered one of the foremost chest specialists in the state.

Since the close of World War II, Dr. McDill had been with the Veterans Administration Hospital as head of the professional service in the out-patient division. In years past he had served on the staff of the Baptist Hospital and of St. Dominic's.

Dr. McDill served his country in both World Wars, and recently retired with the rank of brigadier general in the Medical Corps of United States Army. He entered World War II with the National Guard in 1941, and for the most part was chief surgeon of Persian Gulf Command in Iran. He also saw overseas service in the first World War.

Dr. McDill was a graduate of the University of Sewanee and of the University of Tennessee where he received his medical degree. He was a member of the Methodist Church, and was a resident of 903 Gillespie Street.

Surviving are his widow, Mrs. John E. McDill, the former Theresa Brooks, Shaw; a daughter, Mrs. Guy Bryan Dewees, Jr., Pocahontas; a son, Jack, attorney of Laurel; three grandchildren and a half-brother, Lawrence McDill, Doddsville.

Interpreting Medical Literature

PEDIATRICS

Methods of Induction in Pediatric Anesthesia, Robert M. Smith, Children's Hospital, Boston, Mass.—New England Journal of Medicine, 240:761-65, May 12, 1949.

"One of the most important factors in the successful induction of infants and children is the preoperative handling. Here the first objective is the elimination of fear. This end may be furthered by proper reassurance at home and by admission to the hospital at least one day before operation, thereby aiding in adapting to hospital routines and to separation from the parents. Also important are the preoperative visit by the anesthetist and preoperative medication sufficient to make the child calm and drowsy before arrival on the operating floor.

"Spinal anesthesia or curare and pentothal are infrequently used for infants under one year. Most uniform results have been obtained with the vinethene-ethyl sequence using a small mask with only four layers of gauze. Although slightly more hazardous for routine use in infants, cyclopropane is the agent of choice for the induction of ill, premature and resistant infants since it is breathed readily with little struggling or breath-holding.

"Since there is almost always a large residue in the stomach, the infant with pyloric stenosis should have its stomach emptied via a small nasal tube before anesthesia is started.

"All infants and children should be given atropine to prevent excessive secretions and to depress vagal reflexes. In children over one year of age morphine is indicated for its analgesic effect and to lower metabolic rate. Barbiturates are tolerated well and are useful for sedation. Children one to three years of age are greatly disturbed by needles but lend themselves well to the judicious use of basal narcosis achieved with avertin or pentothal given rectally. Children over three years of age require a maximum of preoperative preparation through drug effect, rational reassurance, and various devices for diverting attention from the unpleasant aspects of the operative procedure. Restraints or eye coverings should not be used.

"Cardiac patients do best with a combination of: 1) sedation adequate to decrease the oxygen demand and decrease cardiac work; 2) a minimum of induction excitement; 3) a maximum of oxygen.

"Because of poor psychologic preparation and the danger of aspiration of gastric contents, anesthesia for the outpatient child may be a major problem although the surgery is minor. A combination of avertin rectally with light nitrous oxide-oxygen, supplemented if necessary by block anesthesia is recommended for most of these cases. Vinethene is often used if the procedure requires only momentary anesthesia."

Comment: We necessarily have a great many children who have their tonsils removed and it falls to my lot to give the anesthetic for these cases. It has been my practice for many years to give a light induction anesthesia with vinethene and then switch to ether. I have never used curare nor would I use pentothal in children. I regard them as a little more dangerous. I heartily agree with the authors' position relative to composing the nervousness of the children preoperatively. If we can eliminate the fear, or at least a greater portion of it, the anesthesia will be very much better, and it will take very much less of it.

VA PATHOLOGY

Past History: Patient, a 59-year-old white cabinet maker, had suffered a minor injury 8-10 years previously caused by a nail driven from a board he was guiding through an electric saw and was not aware that the nail had lodged in the neck. As a small boy he sustained a blow to the testicles and the left had been soft since. From the age of 25 years he had had a hard scrotal mass which remained unchanged. He was the father of eight children and denied all venereal diseases. In February 1947, pt. received 9.6 million units of penicillin for tabes dorsalis of which no evidence was found during hospitilization in March 1949.

Present Illness: C. C. Hoarseness of four months' duration. Cough and moderate expectoration of white phlegm of one month's duration. Progressive dyspnea developed during his hospitalization in March and April. Physical examination March 10, 1947, revealed the following: (1) Paralysis of left vocal cord; (2)

Decreased percussion, subscrepitant rales and breath and voice sounds in lower one-third of right lung; (3) Firm, easily palpable spleen; (4) Atrophic right testicle with a pea-sized nodule in epididymis and a stony hard mass 2 cm. in diameter attached to left testicle which was small and flabby.

Course and Diagnostic Studies: Laryngoscopy: Complete paralysis of left recurrent laryngeal nerve. Bronchoscopy: Fixation of tracheo-bronchial tree without tumor masses. Blood count normal . Serologic tests for syphilis: negative on two occasions. X-ray: (1) Fluoroscopy and films 3-4-47 revealed mass in left mediastinum not separated from the aortic arch by rotation of pt. and foreign body (nail) in neck. (2) Body section films 4-4-47 demonstrated a rounded "tumor" in left upper mediastinum blending with aortic arch. (3) Bucky films and ROA film 4-8-47 further demonstrated the lesion. Biopsy of scrotal mass: "leiomyoma." Exploratory thoracotomy was planned but because of low-grade fever postponed until April 28, 1947. On May 6, 1947 pt. began to have hemoptysis which was intermittent first but became massive on the day of death, May 10, 1947.

Abstract of Discussion

Dr. J. V. Cockrell classified mediastinal lesions near the aortic arch as congenital, infectious, neoplastic, traumatic, and metabolic and ruled out all except lung cancer and aortic aneurysm. There was evidence for both diagnoses, but seemed slightly stronger for aneurysm. Dr. J. W. Evans interpreted the x-rays as a mass in the anterior mediastinum. Dr. Joseph Rosenblatt mentioned the possibility of Hodgkin's disease. Dr. J. F. Busey favored bronchogenic carcinoma because of signs and symptoms referring to the respiratory system, duration of sickness, age of patient and increased frequency of bronchogenic carcinoma. Dr. Leo Elson considered the fatal hemoptysis compatible with aortic aneurysm breaking through into the lung. Dr. J. A. Gallogly stressed the fixation of the bronchial tree as a point for cancer and against aneurysm.

Anatomical Diagnosis

(Hans N. Naumann, M.D.)

1. Aortic aneurysm of arch, luetic, ruptured into left upper lobe of lung.
2. Intrabronchial hemorrhage, massive.

UROLOGY AWARD

The American Urological Association offers an annual award of $1000.00 (first prize of $500.00, second prize $300.00 and third prize $200.00) for essays on the result of some clinical or laboratory research in urology. Competition shall be limited to urologists who have been in such specific practice for not more than five years and to men in training to become urologists.

The first prize essay will appear on the program of the forthcoming meeting of the American Urological Association, to be held at the Palmer House, Chicago, Illinois, May 21-24, 1951.

For full particulars write the Secretary, Dr. Charles H. de T. Shivers, Broadwalk National Arcade Building, Atlantic City, New Jersey. Essays must be in his hands before February 10, 1951.

INTERNATIONAL COLLEGE OF SURGEONS

The fifteenth annual assembly of the United States Chapter of the International College of Surgeons will be held in Cleveland, Ohio, October 31 to November 3, with headquarters at the Cleveland Hotel.

Surgical clinics will be held in several Cleveland hospitals on Monday, October 30. All scientific sessions will be held at the Cleveland Public Auditorium 9:00 a.m. to 5:00 p.m. Tuesday through Friday. A most excellent program has been arranged at which time some of the most prominent surgeons of America, and some foreign speakers, will discuss the current contemporary surgical scene.

One of the highlights of the meeting will be the annual banquet at the Statler Hotel on Thursday evening when America's great surgeon, Dr. Frank Lahey of Boston, will talk on "Some of the Recent Advances in Surgery." Dr. Elmer Henderson, president of the American Medical Association, will deliver an address on "The Importance of International Cooperation in Surgery."

Reservations may be secured by writing to the Committee on Hotels, International College of Surgeons, 511 Terminal Tower, Cleveland 13, Ohio. Preliminary programs may be obtained from the central office, 1516 Lake Shore Drive, Chicago 10.

State Board of Health

FELIX J. UNDERWOOD, M.D.

SANITARY ENGINEERING ACTIVITIES

Jan. - June 1950

by

H. A. Kroeze, Director

A DDT residual spray program was put into operation in April of this year. The purpose of this was to maintain the benefits of the residual spray at a higher efficiency through the early fall months. A five per cent DDT emulsion is being used this season since the experimental work done last fall indicated this type of spray was just as effective and more economical than any of the newer insecticides.

The effectiveness of municipal fogging with DDT for insect control over wide areas has been amply demonstrated in a number of communities during the past several years. This year there will be approximately 60 cities and towns that will conduct fogging programs. The Division of Sanitary Engineering cooperates with these communities but insists that each community carry on a basic program of garbage collection and disposal in order to secure this cooperation.

Some preliminary work on stream pollution studies was accomplished during this period. Because of the condition of Bayou Bernard, a complete study of the pollution load of this stream will begin in June of this year. This work is carried on cooperatively with the State Game and Fish Commission.

Due to the great reduction in typhus fever cases in the state, the Division has curtailed this activity. The work is now essentially on a standby basis with the Division cooperating with county health departments in an effort to maintain an effective barrier against an uprise in cases of this disease. A mouse blood survey, mentioned in our report for the last half of 1949, has continued on a statewide basis. Of approximately 500 bloods thus far the blood from only one mouse has shown the presence of typhus organisms. This mouse was captured where known positive rats existed. It has also been found that mice harbor few rat fleas except where rats exist in numbers. On the whole it appears, at our present low incidence of typhus in rats in the state, that the incidence of typhus in mice is of little public health significance.

The bacteriological examination of waters over oyster-growing areas has continued. Good control has been maintained over the sewage treatment plants discharging into Back Bay of Biloxi, and as a result the sanitary quality of the oyster-growing waters in the Bay of Biloxi is improving. It is felt that before next oyster season it may be possible to open one closed area in this bay if analytical results continue as favorable during the summer months as they have this past spring.

Routine water supply, sewerage, and swimming pool work has continued during this period. Great progress has been made in school lunchrooms throughout this state. Additional sanitation requirements for school lunchrooms will go into effect this fall to further improve these eating places.

During the past six months plans for Grade A pasteurization plants were approved for the State Penitentiary, Mississippi State Hospital, the Feeble-Minded School at Ellisville, and the Mississippi State Sanatorium. It is expected all of these plants will be in operation before the end of this year. Plans are being prepared for a plant at the East Mississippi Hospital.

The Division lost an old and valued employee in the death on March 3, 1950, of Dr. N. M. Parker. Dr. Parker began his public health career as sanitation supervisor with the Jones County Health Department in February, 1925. On July 1, 1926, he was promoted to the position of State Sanitation Supervisor with this Division. On July 1, 1927, when the State Board of Health began an active statewide milk control program, Dr. Parker was promoted to Supervisor of this activity, which position he held until his death. During the years of his service in this capacity he developed an excellent unified market milk program throughout the state. He pioneered this work, and his efforts led to a remarkable improvement in the sanitary quality of the market milk supply of the state and in the increased use of pasteurized milk.

LIBRARY

The library takes pleasure in making known the following new books added to the collection in recent months. Physicians throughout the state are welcome to avail themselves of the loan privileges of the Library (2 weeks for a book; 1 week or less for journals of recent date). The librarian will assemble selected references upon any subject upon request.

*1. Altschule, M. D.—*Physiology in Diseases of the Heart and Lungs.* Harvard Univ. Press, 1949.
2. American Psychiatric Association—*Better Care in Mental Hospitals.* American Psychiatric Assn., 1949.
*3. Barrow, D. W.—*The Clinical Management of Varicose Veins.* Hoeber, 1948.
4. Best, C. H. and Taylor, N. B.—*The Physiological Basis of Medical Practice,* 5th ed. Williams and Wilkins, 1950.
5. Binger, Carl—*More About Psychiatry.* University of Chicago Press, 1949.
*6. Burch, G. E.,—*A Primer of Venous Pressure.* Lea and Febiger, 1950.
7. DeGowin, E. L., Hardin, R. C. and Alsever, J. B.—*Blood Transfusion.* Saunders, 1949.
*8. Dry, T. J.—*Congenital Anomalies of the Heart and Great Vessels.* C. C. Thomas, 1948.
9. Emerson, Haven—*Selected Papers of Haven Emerson.* W. K. Kellogg fd., 1949.
*10. Friedberg, C. K.—*Diseases of the Heart*—Saunders, 1949.
11. Ginsburg, E. L.—*Public Health Is People.* Commonwealth fd., 1950.
12. Hamilton, Alice and Hardy, H. L.—*Industrial Toxicology,* 2d ed. Hoeber, 1949.
13. Harris, Seale—*Woman's Surgeon,* The Life Story of J. Marion Sims. Macmillan, 1950.
14. Harris, H. J.—*Brucellosis,* clinical and subclinical, 2d ed. Hoeber, 1950.
15. Hiscock, I. V.—*Community Health Organization,* 4th ed. Commonwealth fd., 1950.
16. Jolliffe, N., Tisdall, F. and Cannon, P.—*Clinical Nutrition.* Hoeber, 1950.
*17. Levine, S. A. and Harvey, W. P.—*Clinical Auscultation of the Heart.* Saunders, 1949.
18. McCarthy, R. G. and Douglass, E. M.—*Alcohol and Social Responsibility.* Thomas Y. Crowell, 1949.
19. Medical Clinics of North America—*Symposium on Pediatrics.* vol. 34 no. 1, January 1950. Saunders.
*20. Medical Clinics of North America—*Symposium on Cardiovascular Diseases.* vol. 34, no. 3, May 1950. Saunders.
21. National Educational Association—*Fostering Mental Health in Our Schools.* Nat. Educational Assn., 1950.
22. National Health Assembly—*America's Health.* Harper and Bros., 1949.
23. Nelson, W. E.—*Textbook of Pediatrics* (Mitchell-Nelson) 5th ed. Saunders, 1950.
24. Overstreet, H. A.—*The Mature Mind.* W. W. Norton, 1949.
*25. Page, I. H. and Corcoran, A. C.—*Arterial Hypertension,* its diagnosis and treatment. 2d ed., Yearbook pub., 1949.
26. Pattison, H. A.—*Rehabilitation of the Tuberculosis,* 3d ed. Livingston Press, 1949.
27. Plant, J. S.—*The Envelope.* Commonwealth fd., 1950.
28. Mayo Clinic Committee on Dietetics—*Diet Manual.* Saunders. 1949.
29. Robinson, Judith—*Tom Cullen of Baltimore.* Oxford University Press, 1949.
*30. Reich, N. E.—*Diseases of the Aorta,* diagnosis and treatment. Macmillan, 1949.
31. Russell, Sheila M.—*A Lamp Is Heavy.* Lippincott, 1950.
32. Sadler, Sabra S.—*Rheumatic Fever,* nursing care in pictures. Lippincott, 1949.
*33. Shepard, L. C.—*Your Heart*—its work and care. Review and Herald Publishers, 1949.
34. Sigler, L. H.—*Cardiovascular Disease,* fundamentals, differential diagnosis, prognosis and treatment. Grune and Stratton, 1949.
35. Thoms, Herbert—*Training for Childbirth.* McGraw-Hill, 1950.
36. Whitacre, F. E. and Jones, E. W.—*Maternity Care in Two Counties* (Pike, Miss. and Gibson, Tenn.). Commonwealth fd., 1950.
*37. Wolff, Louis—*Electrocardiography,* fundamentals and clinical application. Saunders, 1950.
38. Youmans, J. B.—*Medicine of the Year.* Lippincott, 1949.
*39. Zweifach, B. W.—*Factors Regulating Blood Pressure.* Transactions of 2d. Conference of Josiah Macy fd., 1948.

(*—of particular value in equipping the physician with knowledge which will help him to cope with the state and nation's foremost cause of mortality—*heart disease.)*

New Journals Added:

*1. *Angiology,* the journal of vascular diseases. (pub. bi-monthly by Williams and Wilkins Co., Mt. Royal and Guilford Ave., Baltimore 2, Md.)
*2. *Circulation* (pub. monthly by Grune and Stratton, 381 Fourth Ave., N. Y. 16.)
*3. *American Heart Journal* (pub. monthly by C. V. Mosby Co., 3207 Washington Ave., St. Louis 3).
4. *Journal of Thoracic Surgery* (pub. monthly by by C. V. Mosby Co.

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*(those pertaining specifically to heart, etc.)

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First reports indicate that the final 1950 census figure will be close to 150,300,000 for the U. S. Reports indicate that farm population continues to decline to 17% or 18% of total population, compared with 20% in 1940. Population of big cities, within corporate bounds, has gained little, but big increase has been in suburban areas.

Woman's Auxiliary

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EXECUTIVE BOARD SETS GOALS FOR YEAR

At a meeting of the members of the executive board of the state Auxiliary to the Mississippi State Medical Association July 9 at the Robert E. Lee Hotel in Jackson, Dr. Guyton, president of the Association, and members of the advisory council helped set up goals and plans for the coming year.

Reports were heard from Mrs. Augustus Street, Vicksburg, Mrs. George Owen, Jackson, and Mrs. T. A. Baines, Jackson, delegates to the American Medical Association in San Francisco, where the national objective of voluntary health insurance was given new emphasis.

The following objectives were adopted:

1. Continued promotion of voluntary health insurance plans to offset state-controlled health plans.
2. A state-wide survey of nursing needs, with a view to offering a means whereby the services of practical and Negro nurses may be standardized and utilized by patients not requiring specialized services.
3. A state-wide study of the indigent aged ill. This problem is recognized by all groups as one of increasing demand.
4. The auxiliaries shall assume responsibility in each county over the state for making the dressings for terminal cancer cases. They shall work directly with the local chapter of American Cancer Society, which provides the funds.

Mrs. Augustus Street, program chairman, discussed plans for a month by month emphasis of old and new objectives, starting with:

September—The A.M.A. Twelve-Point Program

October—Voluntary Health Insurance and Endorsements

November—**Today's Health** and the **Bulletin**

WANTED: A young physician interested in a good location. Community supported by three large saw mills, a furniture factory, and a hamper mill. Contact Mr. Carl Fox, Lumberton Drug Store, Lumberton, Miss., or Dr. J. Warren Moody, Poplarville, Miss.

Prophylaxis in Allergic Disease and Management of the Eczematoid Dermatoses of Infancy and Childhood*

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According to statistics 50-79 per cent of the children of allergic parents inherit a predisposition to develop allergy. In my own pediatric practice it is my impression that the percentage is even higher than 70. The percentage of allergic children in a family with a bilateral history of allergy is greater than when only one parent has allergy; furthermore, the allergic symptoms are more likely to develop earlier. The importance of prophylaxis in allergic disease has not been sufficiently emphasized despite the advances made in allergy.

While the tendency to develop allergy is inherited, it should be understood that neither the specific allergic diseases nor the specific etiologic factors are necessarily the same as those of the ancestors. The development of allergic disease depends not only on an inherited constitution, but also on the nature, the amount and the interval of exposures of the antigens, as well as the amount that actually finds its way into the blood stream! One can hardly prevent allergies on a eugenic basis as people with allergy will continue to get married and have children, but we can help these parents a great deal by giving them a few prophylactic measures which will cut the incidence of allergic difficulties in their children.

It is common practice for pregnant women to go to excesses in their dietary habits during pregnancy, and if it happens that those excesses involve wheat bread, or eggs, common allergic offenders, then trouble may easily develop for the infant soon after birth. It is better to avoid such excesses in the hope of reducing the possibility of acquired sensitivity by the fetus. In my own practice I feel relatively certain that was the case in one of my patients, the infant daughter of a doctor, an allergist in fact. The mother had eaten quantities of eggs during pregnancy. The infant had severe diarrhea, as many as 10-20 stools daily, almost from birth. This diarrhea was reasonably controlled by the usual methods of handling diarrhea, but it would always return and the father had observed it was worse after his wife ingested eggs and would cease when she omitted them. This infant gave a positive skin test to egg in early infancy long before she would normally have ingested eggs, and she was not able during the first year of her life to take even the amount of egg in meat loaf without getting a severe diarrhea.

Prophylactic measures when properly applied to infants and children of allergic parents are of **definite value.** These measures may result in a definite delay in the onset of symptoms or prevent them altogether. I have found a great many mothers have the idea that they must give the young infant a wide variety of solid foods when he is first started, to keep him happy, and if he takes carrots poorly they try spinach. They don't realize or have not been told perhaps that no infant takes solid food well until he learns how to handle it. In their eagerness to get him to take **something** they switch from one vegetable or fruit to another and one cereal to another, even within the span of one day, not realizing that it would be far safer to stick to one new food for 5 or 6 days before introducing another. Rotating the food every 5 or 6 days is a good prophylactic measure even though they have not been known to cause difficulty.

A great many of my allergic infants and children come to me having had no immunizations of any kind, at even twelve or fourteen months, the practitioner having warned the mother that being an allergic child, the reaction would be more severe or even dangerous. This, I feel, is a **most unwise** practice.

We know that in the presence of infections, allergies of all kinds are always worse. Such infants and children should receive all the protective measures the general practitioner or pediatricians has to give, except smallpox vaccination, if there is any tendency to eczema[2]. Such a child should especially be protected against pertussis, diphtheria, tetanus and measles and in so far as possible, upper respiratory infections. Nurses or maids with chronic sinusitis or bronchitis are just as much a hazard to these children as they would be with tuberculosis.

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*Read before the Section on Pediatrics at the eighty-second annual session of the Mississippi State Medical Association, Biloxi, Miss., May 9-11, 1950.

It is not desirable to take the baby off the breast because he develops a slight rash. In a study of over 20,000 infants at feeding stations in Chicago, Gurlee and Sanford[3] showed that the incidence of eczema was lowest among infants who were breast fed, and seven times as great among those who had been artificially fed completely. If suspected allergic symptoms occur, it is better to instruct nursing mothers to take a varied diet, but not to overeat, and especially not to over indulge in any one food, particularly eggs, wheat or chocolate.

If supplementary feedings are necessary, evaporated milk is the safest. I get a good many eczema babies referred to me, by the general practitioner, who has been put on raw cow's milk as a therapeutic measure for their eczema. This practice is particularly bad, as it exposes the child to such diseases as tuberculosis, undulant fever, and streptococcal infections, all of which will make his allergy worse, and furthermore the heating process of pasteurization or evaporation coagulates the milk proteins so that they are rendered insoluble, and are not readily absorbed into the blood stream as antigens, but instead remain in the intestinal tract until digested, and are absorbed as harmless amino acids.

Synthetic vitamin C should be used rather than orange juice as it results in less hypersensitivity on the part of the infant. It is wise to start this cautiously as many infants can take 8 mg. or 12.5 mg. or even 25 mg. of ascorbic acid without a rash, but break out immediately on 100 mg. or even 50 mg. which is in most of the multiple vitamin preparations.

It is important in preventive treatment to control or avoid common substances which may be predisposing factors in the pre-allergic child.

It is definitely known that a potentially allergic patient who constantly inhales various substances such as house dust, certain occupational dusts, animal hair, feathers, mold spores, etc., may become sensitive to some of them.[4] Insofar as is practicable, it is important to see to it that the potentially allergic child has a home environment as free of dust, animal danders, insecticides, etc., as possible, and one should try to eliminate or control any other common allergenic inhalants which might be a potential factor.

Perhaps the average family uses a satisfactory variety of foods, but I find a good many and unfortunately those with pre-allergic children have a habit of using to excess a few of the basic foods, such as wheat products to the exclusion of all other cereals, or excessive amounts of wheat bread. I had one nine-year-old girl who was consuming 12 slices of white bread daily. Needless to say, along with her other troubles she was also overweight, and her mother wondered why!

A well balanced and varied general diet is to be recommended as a means of precaution against developing allergy to various common foods in those who have a family history of allergic disorders.

Eczematoid Dermatoses of Infancy

The eczematoid dermatoses of infancy and childhood are characterized by polymorphous lesions, papules, vesicles, scales and lichenification accompanied by itching. They represent an allergic response to a sensitizing agent on the part of a susceptible individual.

Dr. Lewis Webb Hill of Boston[8] has classified these dermatoses as follows:

1. Atopic dermatitis
2. Seborrheic dermatitis
3. Contact dermatitis
4. Circumscribed neuro-dermatitis
5. Eczematoid dermatosis due to micro-organisms
    a. Fungus
    b. Non-fungus
6. Nummular eczema
7. Combinations of any or all of the above.

Of these dermatoses, the most important in infancy and childhood is **atopic dermatitis.** 75 per cent of all eczemas one sees, are atopic dermatitis. It is a disease the child may get at three months and have the rest of his life or he may get rid of it at two years. It constitutes a phase in the development of his allergy. This condition I will discuss in some detail, but before I do, however, I should like to discuss the diagnosis and treatment of the other dermatoses mentioned in Dr. Hill's classification.

Seborrheic Dermatitis

This condition occurs more commonly than any other dermatitis in infancy and is more likely to occur in fat babies. It starts over the anterior fontanelle in the form of the "cradle cap" or milk crust. The lesions in this condition are not vesicular but rather plaques with scales. One reason for its occurrence in this spot may be the timidity on the part of mothers to clean the soft spot and hence scales accumulate. In older children and adults "dandruff" is the most common form of seborrheic dermatitis. This type of dermatitis characteristically may develop in the very young infant, under three months, and often starts first as the cradle cap and then extends to the vertical third of the face, the eye brows, the chest and pubic area if it is the scaly erythematous type.

Another form of this dermatitis presents a moist fissured eruption, effecting especially the post-auricular folds, the umbilicus and the intergluteal cleft, and flexures of the elbow. Dr. Hill[9] feels that although the cause is actually unknown it may be due to too much fat and sugar. He feeds these babies on a milk, high in protein and low in fat and sugar, such as partially skimmed milk with casec added. You can get now a skimmed evaporated milk (Sunnyside) to which casec can be added and the milk protein subjected to heat, which is less antigenic than regular milk. Apple sauce given early will relieve constipation in these children if it develops on this diet.

A weak salicylic acid ointment or 2 per cent ichthyol in Lassar's paste or vioform ointment will usually clear this up.

This type of eczema does not itch a lot but I usually have the mother keep the parts covered with a cotton jersey shirt and mask also if the face is bad. It softens the skin by keeping the ointment in close contact with it.

Contact Dermatitis

There is no hereditary factor in this type and it occurs less commonly in children than adults. It is due to a hypersensitivity of the epidermis to one or more substances which may be of almost any composition.

Scratch tests in this type are commonly negative and patch tests are positive. (Duke Laboratories provide patches for skin testing especially prepared.)

Poison ivy is the classical example of this type of dermatitis. Sensitization is caused by Rheus toxicodendrum and later eruption from constant exposure. Primrose, perfumery, quinine, and mercury can also cause it. In young babies you can get it from bleaching powder used to wash diapers, orange juice or spinach around the mouth, or furniture polish or shampoo and in hospitals the sterilizing solutions in which rectal thermometers are kept. Ammoniacal dermatitis is another form of contact dermatitis.

The lesion in this type is erythematous, bullous or vesicular.

The treatment of contact dermatitis is most satisfactory if the cause is found and removed. Symptomatic medication can be used to relieve itching, such as,

Liquor carbonsis detergens 5 per cent in shake solution

Burows—soln.

Benzocaine 3-4 per cent

Antihistaminics, such as pyribenzamine orally in form of ointment or creams are often of help. The main thing is not to overtreat.

Eczematoid Dermatitis Due to Micro-organisms

Fungi. These are limited usually in pediatric practice to lesions between the toes and on the feet of older children. It is hard to know how much of this is mixed with infantile eczema. In infancy and childhood the predominating organism is **Monilia** rather than **Trichophyton** as is in the older children and adults.

Bacterial. A chronic discharging ear may produce an eczematoid reaction of the surrounding area due to the staphylococcus.

Nummular Eczema

The word nummular means "coin-like" and this type of eczema is characterized by sharply defined circular or oval patches, usually of a rather dark color from size of a dime to a silver dollar, on extensor surfaces of arms or legs, though it may occur anywhere including the face. The individual patch is made up of fine vesicles. The older and larger patches are always thick and boggy and always a little moist, but not weeping. They clear a little in the center but not as much as patches of ringworm do. The patches are more regular in outline than those of atopic dermatitis. Itching may be almost absent or moderate. There is never the severe itching that there is in atopic dermatitis. This condition improves when painted with a 3 per cent aqueous crude coal tar solution rather than an ointment, as greasy salves make it worse.

Atopic Dermatitis (Infantile Eczema)

As I mentioned before, this type of simple eczema constitutes 75 per cent of all eczemas you see. This type of eczema usually begins about the second or third month of life and more often starts on the face or outside of the lower legs.

It is characteristically an exudative papule which may or may not go on to true vesiculation. Tremendous oozing is not common and it may be a dry eruption. **Itching is terrific** and is one of the characteristic symptoms of this condition.

Nutrition is not interfered with much unless an unwise physician keeps eliminating essential foods from the baby's diet on "suspect" alone, leaving him on a most deficient diet in hopes of curing the rash.

I had one eczema case referred to me that weighed 14 pounds at 8 months and gained over six pounds in the following three months as well as got the rash cleared. You can overdo the elimination of foods suspected of causing the allergy and eliminate the baby! The child was on raw goat's milk and no other food when I first saw her, and she had a severe nutritional anemia. When we discuss treatment I'd like to show you two pictures her mother sent me on a Christmas card, as it illustrates how these babies must be covered and restrained from scratching.

There are certain characteristics of atopic dermatitis or "infantile eczema" that we should keep in mind. It is the most important skin disease of infancy and childhood[10] and is characterized by:

a) An hereditary predisposition. I rarely take a history on a infant with eczema without finding that one or both parents or their immediate families have had several different types of allergies.

b) Hypersensitivity of the deeper layers of the skin to protein or protein-like allergens. Scratch or intra-dermal tests usually produce wheat reactions of an immediate type.

3) Allergens responsible for the eruption may reach the sensitized tissue by ingestion, by inhalation, or by absorption after direct contact.

I suggested in my remarks on prophylaxis of allergic disease the importance of avoidance of house dust. This is often just as important in infantile eczema as it is in asthma, a point which was only recently stressed by Tuft[4] at Temple University.

Just recently a baby came to my office with a severe oozing and slightly infected rash on the palms of his hands and anterior surface of his legs from knees to ankles. He was at the crawling stage and was constantly on the floor. He gave a hugh reaction to house dust. Covering the extremities, keeping him off the carpeted floor, removing the ozite pads, and treating the rash locally with ointment, completely eliminated it.

d) Passive transfer tests are often positive. We mean by this, tests done on the parents, when the patient's skin is too involved or too irritable to be tested directly. This method of testing though, I feel is too involved for the average practitioner and usually not necessary. It is my practice by means of an elimination diet and local treatment to clear up the rash and then do selective testing based on the history, if the child is an older child eating a wide variety of foods. On the basis of his reaction to the essential foods and the history, we can then work out a reasonable diet. It is my feeling that many cases of infantile eczema do not require extensive testing, if any.

e) One should never forget that the child with atopic dermatitis or infantile eczema as he grows older may develop in this order: recurrent upper respiratory disorders; pollinosis, and asthma.

There are three chief groups of atopic dermatitis—the acute (and this includes atopic erythroderma), the chronic, and atopic dermatitis by contact.

The acute stage usually goes through 3 or 4 stages and any or all of them may be present simultaneously, the congestive or erythematous, vesicular, moist or weeping stage, and crusting due to the drying of the exuded serum. If atopic dermatitis persists it tends to localize in the cubital and popliteal fossae, around the wrists and ankles, especially on the extensor surfaces, and around the neck and to a lesser extent in the axillary folds. The trunk is comparatively uninvolved. By the time the condition is localized it is referred to as a **chronic atopic dermatitis.** In this stage lichenification or exaggeration of the normal cross markings of the skin is common, due to long continued scratching.

Atopic erythroderma is a term invented by Hill[5] to describe the condition which represents the highest degree of atopic dermatitis in infancy. It does not occur often. Hill reported it in 5.4 per cent of 1300 cases. I have seen only one. Characteristically in this condition, there is some vesiculation with frequent episodes of profuse scaling. The infants have blue cold feet and a marked generalized lymphadenopathy. These infants are resistent to all forms of treatment but regardless of therapy eventually improve. They frequently react to cow's milk and they itch terribly and almost tear themselves apart.

Treatment of Infantile Eczema

Of all the points in treatment that should be stressed, I believe the most important is to take time to give the mother detailed instructions as to how to carry it out, not just write a prescription for an ointment and expect her to know how to apply it. The detailed instruction should emphasize the need for preventing scratching and keeping the skin covered at all times. There is no use in treating at all without covering the skin, as scratching alone can produce much of the picture one sees in neglected cases of eczema.

Don't tell the mother the child will outgrow the condition at two, and that she might as well let it run its course, as in the meantime neither the baby nor the mother gets any rest. In the older children, the presence of a diseased skin may cause psychic trauma. Every effort should be made to clear the child's skin as soon as possible and to keep it clear thereafter.

As we have stated before, the presence of atopic dermatitis is an indication that the child is an allergic individual, and the skin manifestation is only one phase of a cycle that may progress, involving various shock organs for the rest of the patient's life.

The object of treatment should therefore be not only to relieve the present complaint, but to outline a way of life that will possibly prevent the future development of other more serious allergic states such as asthma.

Prophylactic measures we have already discussed.

Environmental control is very important! It is quite generally accepted that atopic dermatitis may at times be caused by direct contact of allergens with the skin (transepidermal penetration) as well as by allergens which reach the skin by the blood stream after inhalation.[4] **Most of the eczema cases benefit by carrying out house dust avoidance** and some allergists such as Tuft[4] are treating atopic dermatitis patients by infection of house dust extract with good results in some cases. I believe, however, this is unnecessary in most cases.

Specific directions should be given for avoiding other material to which the infants are or may become sensitized as feathers, (so many mothers have small feather pillows in the infant's bed that are quite unnecessary) animal pets, silk, clothing dyes, wool, and soap.

The local treatment of atopic dermatitis depends upon whether it is acute, acute with exudation of serum, or chronic.

In the exudative stage probably the best treatment is the application of a 0.5 per cent solution of aluminum acetate in a 1:20 dilution or Burow's solution. I have got the mothers to carry this out successfully by laying over the checks where the rash is worst 3x3" sterile gauze dressings and holding these in place with a stockingette mask. The dressings are kept wet by adding the solution to the mask through the opening with a medicine dropper. If the rash is very much secondarily infected, potassium permanganate in dilutions of 1:5000 or 1:10,000 can be used or (1 tablet 5 gr. in 2 quarts of water). I do not believe wet boric acid dressings should be used because of the danger of absorption of too much boric acid through the raw surface.

Other forms of treatment of this stage are colloidal baths—soaking for 15 minutes and patting, not rubbing the child dry with a solution 1-2 cups of corn starch in a tub of tepid water, or tar baths, liquor carbonis detergens (N. F.), a saponified alcoholic extract of coal tar (2 cupfuls to a tub of water); 10-minute soakings four times daily are also helpful.

In the subacute and chronic stages, ointments are best and the most efficient ingredient in my experience is tar. In spite of the various fancy coal tar preparations white or flesh colored, I still prefer and get better results with the old nasty black crude coal tar. The exact action of tar is not known but observation and experience tells us it does have a definote antipruritic value. I rarely have to give these children sedation, once treatment is strated. If I do I usually use phenobarbital. Tar should not be used if the baby is to be in direct sunlight or if infection is present. Clear up the infection first.

For the infected eczemas if not exuding, vioform ointment, put out by Ciba Products a 3 per cent concentration in petrolatum or in a vanishing cream base of equal parts is very good. Of course the skin still needs to be covered with stockingette mask, long white cotton stockings and scratching must still be prevented.

Dietary measures on the first visit are very important, and I see all these patients a second time a week later. Usually the baby is put on an elimination diet which takes away immediately most of the things that are apt to make him worse.

Actually the elimination diet is individualized to some extent according to the history which is obtained from the mother. For example, if I learn that when she changed the baby from breast milk to evaporated milk the rash started, then the cow's milk protein is immediately eliminated, although ordinarily evaporated milk is a satisfactory food to leave a baby on. Milks that will allow one to do this are Mullsoy or Sobee, both derived from the soybean.

Substituting the milk of another mammal, such as goat's milk, is occasionally successful if the patient is sensitive to lactalbumin which is species specific. However, the great majority of infants sensitive to milk are allergic to casein, and this is essentially the same composition regardless of the species of animal.

Should the infant be sensitive to soybean, a satisfactory artificial milk with a protein base of strained meat (Swift's Gerber's) will meet the requirements for growth and development.

The elimination diet that I frequently use, except in special cases, is as follows:

Milk: Evaporated milk

Cereal: Cream of rice or boiled rice and some times Gerber's barley, corn meal mush or corn flakes, depending on habit and desires of child.

Vegetable: Carrots and string beans.

Fruit: Prune pulp or pears or peaches.

Meat: 1-2 cans of strained lamb, and later add liver or heart for one of the cans.

Vit. D: Squibb's navitol with viosterol, 3-4 drops daily.

Vit. C: Omitted for first 10 days since so many infants seem to develop a rash from orange juice and even synthetic vit. C. At the end of 10 days if the rash is better, vit. C in 8-12 mg. doses is started and very cautiously increased to a maintenance dose. I can say that most of the infantile eczema cases I have progress very satisfactorily when handled this way. Very few have to have skin tests.

When the rash is clear one new food is added each week according to the child's needs and tolerance.

In 1933 Burr and Burr at Minnesota developed the idea that maybe eczema babies lacked linoleic acid (an unsaturated fatty acid) and that if supplied they would improve. In 1947 Dr. Arild Hansen[11] experimented with the use of unsaturated fatty acids such as corn oil and lard, 1 tsp. 3 times daily, and he concluded it was a worth while adjunct in treatment though not a cure. Lard can be given with jam and the babies like it.

In the difficult cases, direct skin testing is done and the tests to be made are based upon clues obtained from the history as to inhalants and contactants that might have a bearing on the child's skin difficulty. Common offending substances in eczema are cow's milk, wheat, eggs, spinach, Irish potatoes, peanuts, house dust, wool, and in older children chocolate.

Summary

I have tried to present to you ways by which some allergic difficulties can be avoided and have discussed various types of eczematoid dermatoses seen in infancy and childhood and from a practical standpoint the problems presented in therapy.

I should especially like to stress the fact that these children should not be left to outgrow their difficulty as a child with a raw itching skin becomes impossible to live with and the older child experiences psychic trauma. Furthermore the true infantile eczema or atopic dermatitis is often the forerunner of recurrent upper respiratory disorders, pollinosis and asthma. The object of treatment is not only to relieve the present complaint, but to outline a way of life that will prevent the future development of other more serious allergic states, such as asthma.

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Current Trends in Shock Therapy*

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THE RECENT war acted as a stimulus for investigation and evaluation of shock therapy. Some of the results of investigative procedures seem conflicting and when one discusses the subject of shock with medical students or even with experienced surgeons, an attitude of complete bewilderment is occasionally encountered. The multitude of conditions to which the term "shock" is applied adds to this confusion. From the practical standpoint the term "surgical shock" is ordinarily used to describe circulatory failure that occurs with many conditions, such as hemorrhage, trauma, tension hemothorax, spinal anesthesia, acute infections, or combinations of these[1]. In an effort to find the common causes of surgical shock a review was made of the surgical deaths during the past five years at Jefferson Davis and Hermann Hospitals of Houston, Texas[2]. The causative agents and number of each were as follows:

1. Hemorrhage	7
2. Trauma	1
3. Hemorrhage and trauma	40
4. Hemorrhage, trauma and contamination	24
5. Hemorrhage, trauma, cardio-respiratory embarrassment and contamination	10
6. Hemorrhage, trauma and cardio-respiratory embarrassment	16
7. Sepsis	6
8. Burns	4

One is impressed from this survey that the causative factors in shock are usually multiple and that the pure traumatic or hemorrhagic shock on which most of the experimental observations are based is not commonly found in clinical practice.

All but ten of the deaths had trauma or hemorrhage or both as causative agents. Numerous theories have been proposed for the circulatory collapse that accompanies trauma and hemorrhage; nervous factors[3,4], the toxic theory[5,6,7], abnormal products of metabolism[8,9,10], acidosis[11], sludge blood[12], enzyme imbalance[13], bacterial toxins[14,15], generalized increase in capillary permeability[16,17,18], reduced blood volume[19,20], and reduced cardiac output[21,22]. Most of these theories are good and all are being further investigated. However, some of them are founded on animal experiments only and may not necessarily be applicable to humans. An example of this is the theory of increased capillary permeability. The theory has been held that the loss of plasma through damaged capillaries was the principle cause of shock[16,17]. Large quantities of plasma were shipped overseas for the treatment of casualties but proved to be inferior to whole blood in shock. Further investigations have shown that the tissue fluids are drawn into the blood stream instead of plasma being lost into the tissue spaces[23,24].

From a study of shock in humans, Cournant **et al**[19] concluded: "The anatomical factor immediately responsible for circulatory failure in our cases appeared to be a deficit in blood volume." In a comprehensive review of shock Wiggins[25] concluded: "The similarity of changes in central arterial pressure pulses during hemorrhage and shock indicate that the dynamic sequence is the same in both, except that in traumatic shock vasodilatation may be a temporary prelude."

The treatment of shock from trauma hemorrhage, then, should be directed at restoration of blood volume by transfusions of whole blood. The blood volume deficit should be corrected as soon as possible because if not corrected the patient may not respond to treatment. This failure to respond to treatment has been called "irreversible shock," and though this is not a good term, it does serve to emphasize the fact that to be successful treatment must be begun early. The pathological changes that interfere with response to treatment after an interval of time are not well understood. But there appears to be irreparable damage to the liver if this organ is deprived of adequate oxygen for a length of time which varies with different individuals.[26,27]

The shock that accompanies burns is also due to a reduction in blood volume. We have recently made a survey of the blood volume deficit in burns and have found that the deficit is usually in whole blood and that about 50 cc. of whole blood per 1 per cent body surface area burned is needed as replacement therapy. In children this figure was 77 cc. per 1 per cent body surface area burned.[28] The same general rules apply here as to early therapy.

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*Read before the sixty-first annual session of the Mid-South Postgraduate Medical Assembly, Memphis, Tenn., Feb. 14-17, 1950

The shock associated with cardio-respiratory embarrassment is often due to tension pneumothorax or cardiac tamponade.[29] These conditions are best treated by decompression of the pleura or pericardial cavity. However, they were always associated with trauma, hemorrhage, contamination or sepsis in our cases, so that physiologic derangement caused by these conditions must also be treated.

The shock associated with gross contamination or sepsis has been shown by Elbert and Stead[30] to be due to a generalized circulatory failure, presumably caused by the action of bacterial toxins on the blood vessels. The treatment, then, should be directed at control of the infection. This type of shock is occasionally encountered several days after surgery from overwhelming peritonitis. However, it was more often a shock producing factor associated with hemorrhage, trauma or cardio-respiratory embarrassment in our patients.

When several of these lethal agents are associated with shock in one patient, one treatment may be over-emphasized at the expense of others. This too frequently leads to disaster and can only be avoided by frequent painstaking evaluation of the response to therapy.

The term "chronic shock" has recently been introduced to describe the syndrome of chronic illness associated with weight loss, protein depletion and reduced blood volume. The use of the term "chronic shock" is not true in its narrowest definition when applied to this syndrome[31]. However, it does serve to draw our attention to the increased susceptibility of these patients to shock. The associated low blood volume is not always apparent in the blood count because there is a reduction of both plasma and the red blood cells. For this reason a false sense of security may be given by it. The hematocrit is a better index of the status of these patients than the red blood cell count, and the administration of 500 cc. of blood for each three points that the hematocrit is below 45 will usually restore the blood volume. In small patients and those having a hematocrit below 30, this may result in over-administration of blood.[32] A better laboratory criterion than either of these is determination of the blood volume itself. We have found from a study of a number of these patients that the clinical picture of the condition of chronic shock is sometimes more reliable than any of these laboratory procedures and patients who have lost a large amount of weight or who have chronic empyema or other conditions that cause a large protein loss can be presumed to have a low blood volume.

In the cases of shock that we reviewed, chronic shock could be said to be a contributing factor in only 20 cases.

The uses of drugs or hormones have been disappointing in the treatment of shock and some, such as adrenalin, may actually be harmful. One of the chief objections to these agents is that they consume the attendant's time and in institutions where they are used it has been my observation that other more physiologic measures, such as transfusions, have frequently been neglected. Other measures that aid in the treatment of shock are the prevention of further trauma, relief of pain, maintenance of an open airway, and the prevention of over-heating.

Even though we do not understand some of the pathogenesis of shock and the causes of irreversible shock, we do know enough to permit successful therapy, in most cases, if these physiological principles are kept in mind.

Summary and Conclusions

Some of the different types of circulatory failures classed as surgical shock have been discussed and a practical approach to the problems of therapy given.

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DELTA MEDICAL SOCIETY

PROGRAM

October 11, Belzoni

Reaction from Blood Transfusion—Dr. W. D. Fitzgerald, Cleveland.

Discusser: Dr. James C. McRee, Ruleville.

Physicians and the Outdoor Life—Dr. J. N. Mecklin, Louise.

Menstrual Irregularities—Dr. George Nassar, Greenwood.

Discusser: Dr. J. W. Lucas, Greenwood.

Leg Ulcers—Dr. H. L. Cockerham, Ruleville.

Discussers: Dr. F. A. Clark, Jr., Ruleville; Dr. J. C. Russen, Cleveland.

Presence and Recognition of Common Urological Problems—Dr. C. A. Murray, Greenville.

Discusser: Dr. Paul Gamble, Greenville.

Guest Speaker: Dr. George B. Fletcher, Hot Springs, Arkansas—Some Everybody Problems in Neurology.

The Crisis and Our Duty*

DR. B. B. O'MARA
Biloxi, Miss.

Mr. Chairman, Ladies and Gentlemen, and distinguished guests—how pleasant it is to come together again and renew old friendships! I always look forward to our meetings in Jackson because the members of the Central Medical Society prove such gracious hosts.

My first duty is to thank my colleagues for the high honor bestowed upon me when they elected me president of the Mississippi State Medical Society. In my journeys over the state I have benefited greatly from the association and fellowship among the members at large. If I have made mistakes, let me assure you they have not been of the heart, for there I will always hold the welfare of our state organization above any personal, individual or group interest. As time passes in the future, I will look back with fond memories on the past year as the highlight of my medical career. I will remember each individual contact with you as a treasure time will not dim, nor destroy.

I am grateful for the privilege and honor being permitted to serve as your president. I also want to express my gratitude to the various committees and to the chairmen of the various sections for their faithful service and cooperation in making the past year, and this meeting, a successful one.

I would like to congratulate the Woman's Auxiliary of the Medical Association, under the capable guidance of their president, Mrs. A. Street, for the noble work they have done. My appreciation goes out to all of the organizations in the state and to the members of the state legislature for their successful ef-
cause it has done more to ward of socialized
in our present crisis, we cannot help but be
loyal to our society in our present crisis, we
cannot help but be loyal to our country. Let
us give freely of our financial and moral sup-
port to the American Medical Association, be-
of free nterprise in other fields. It behooves
forts in securing for us a much needed four-
year medical school and teaching hospital. Fu-
ture generations will look upon it as a monument in the progress of Mississippi and will be forever grateful.

The second edition of the history of the Mississippi Medical Association came off the press this past year. It is a treasure to each doctor in the state, and on behalf of the state as a whole, I want to thank the historian, Dr. James Grant Thompson, of Jackson, for the vast amount of time and effort he put into this work.

In looking over the history of our society, one is impressed with what a curiously different country it was when the society was born in the year of 1856. It was then a primitive country of dignified simplicity and charm with many fine and outstanding doctors of their day—men who loved their fellowman and proved it by their service, men who kept straight in the path of duty, who always gave the right hand of fellowship, real leaders and, in this book, we can feel the contagion of their lives. With such men forming the cornerstone of our association, it has a firm foundation. There are a number of reasons for our society's existence, but two of them stand out. One is the increase of knowledge. Our education does not end with our graduation from medical school; it must be continuous with life if we are to succeed as physicians. It is a distinct loss when we are prevented from attending medical meetings. It is one thing to read an article in our medical journal, but how different it is to hear and to know the author, to listen and to take part in the discussion.

The second reason is sociability—to cultivate good fellowship for unity and friendship. We are physicians largely because of our love for humanity, and we must apply this to our Association and to one another. If we are merely scientists or moneymakers, we will get nowhere. No one doctor can help make our state society greater, better, and more successful, without enriching himself as well. I trust we will never become so scientific as to lose sight of friendship and fellowship. To do so would cause us to die of "dry rot"—which reminds me of a story.

My wife is a rather straight-laced individual, objecting to all so-called "vices"! The other day I was rushing out of my office and was accosted by a shabby, rather unkempt person who asked for a dime for a cup of coffee. I looked him over and felt sorry for him, and said, "Friend, come on in this bar and let me buy you a drink." "I'm sorry," he said, "I never drink." "Then let me buy you a good cigar." "I'm sorry," he replied, "I never smoke." "Well, I'm on my way to the racetrack and have a hot tip on a horse. Come with me, and I'll place a bet on this horse for you and if he wins you take all the winnings!" "I can't do that!" he announced, "for I never gamble." "Then, what the hell do you do?" I asked. "Please," he said, "Don't use profane language —I never curse." In amazement I looked at him and said, I'll give you $10.00 to come home with me and allow me to introduce you to my wife!" "Why," said he, "Do you want to do that as shabby as I am?" "Well," I said, "I just want her to see what happens to a man that don't drink, don't smoke, don't gamble and don't curse!"

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*President's address delivered before the eighty-second annual session of the Mississippi State Medical Association, May 9, 1950, Jackson, Miss.

Since the birth of our nation, and the signing of the Declaration of Independence in 1776, we have been a proud and independent people. Our nation was born in the midst of a crisis that determined whether we would be a free people, governed of the people, by the people and for the people or, continue to be under the domination and servitude of another country. Thanks to the leadership of stalwart men like Washington, Franklin, Henry, Adams, Jefferson and others equally important, but too numerous to mention, we emerged victorious and the United States of America came into existence.

Thanks to the rugged individuality, the integrity, and high moral fibre of our forefathers, we have been able to withstand every crisis since, be it panic or war, up to the present. What noble figures arose during our War Between the States in the sixties. The stalwart, honest Lincoln, Jeff Davis, the magnificent Robert E. Lee, Jackson, Grant, Forrest, Stuart and Sherman, to mention a few. These and others handed down to succeeding generations the same characteristics as did the "giants" of the Revolutionary days, by virtue of which the crises of World Wars I and II were successfully hurdled.

What of our present crisis? It is not one of war in the sense of booming cannons and marching feet of soldiers that quickens our spirit and patriotism—but, it is an insidious thing that has been gradually creeping into our country and government for the past generation, and especially for the last twenty years. From 1776, the year of the signing of the Declaration of Independence, and the Revolutionary War, until the first major internal crisis our country experienced, the War Between the States in 1861, it was exactly 85 years. From the end of that war in 1865 up to our present internal crisis, another 85 years have elapsed. Whether this is of any significance or not, I feel confident the Great Ruler of the Universe will look down upon us in His Omnipotence and bring forth leaders of the same quality as of old to guide and keep us free and independent.

What is this crisis of which I speak? It is the malignant arm of Socialism, the forerunner of Communism, that has been creeping silently upon us and eating at the heart of the structure of our government and attempting to disrupt us from within. Left alone and allowed to flourish, it will destroy us and our way of life just as surely as if we were invaded by the hordes from Russia and stood meekly by and offered no resistance!

Many causes have contributed to the state of affairs of today that have allowed the dark clouds of Socialism to cross our sky—the weakening of religious faith; the loosening of bonds of parental control; the absence of law enforcement; the laxity of our immigration laws allowing an influx of undesirable aliens, among whom is represented every "ism" the world has known; the lack of integrity and duty in some of our leaders in high public office— all have been at work to undermine the foundations of respect and reverence for our beloved country.

You know, and I know, that adherents of socialistic belief are occupying positions on the faculties of our colleges and universities, and are in key positions in our government. They are trying to obliterate our manner of living, our system of free enterprise and trying to dull our vision and our thoughts with the promises of a welfare state—of free medicine, free hospitalization, unemployment compensation and social security. "Social insecurity" are more appropriate words! These wreckers of orderly society, unrestrained by principles and unhampered by convictions, are playing with the fire of human passions and mob violences. They are trying to make us wards of the government instead, as in the past, the government being a ward of the people. They would have us abandon the old philosophy of "What the individual can do the government should not do" and replace it with the dangerous doctrine of, "What the government can do, the individual should not be permitted to do." If what they advocate is put into effect, it will create a shiftless, indigent, indifferent race of people and will mark the beginning of the downfall of our nation!

They are, as they have so recently done to our neighbor across the Atlantic, trying to bring medicine under federal control, trying to force upon us compulsory health insurance, with all its obnoxious red tape and attendant high taxes, regimenting the doctors, dictating to them, when, where, how, and on whom they may practice. In England after a little over a year of socialistic medicine, the taxes have increased over 50 per cent, the death rate from all causes has gone up instead of down, and the incidence of disease has skyrocketed because the public health system has deteriorated. The same would happen to us. If they are successful in federalizing medicine, next would come the federalization of merchants, farmers, bankers, labor, utilities, and eventually religion. Their promises of the welfare state will lead to a dictatorship and a police state!

Our medical profession has been an honorable and distinguished one since the early days of our history. Up to the present, unhindered by government restrictions, and under the competitive spirit of free enterprise, it has assumed world leadership in the advancement of scientific knowledge to combat and prevent disease. It is one which the people of our nation look to with justifiable pride; our service to humanity speaks for itself. Only under such a system as ours can such physicians as the Mayos, the beloved Rudolph Matas, Murphy, Blalock, the gracious Seale Harris, Oschner, Brennermann, Irons, Henderson, Lull, and hundreds of others equally as great, be produced. Only under such a system as ours can the most lovable figure in medical history emerge the family physician, the central figure in every smaller community. Unselfish service was and is the motivating force that impells him to go night or day to relieve the aches and pains, imaginary or real, of his people. Under any other system, especially government-dominated medicine, this figure and this doctor-patient relationship will be destroyed. We make a living by what we get, but we make a life by what we give. Under any other system, we will lose the competitive spirit, the desire to live and the desire to give.

My friends, socialized medicine is not the main issue, although it is the one closest to us. The real crisis is Socialism, in every sense the word implies. It is whether or not we sit idly by and watch the minority usurp control of our government, making it socialistic and communistic, headed by a dictator; or whether we arouse ourselves and demand that we continue a free and independent nation. Eternal vigilance is still the price of Liberty!

Already, the government has invaded the field of utilities, insurance and farming, as well as medicine. We, as doctors, have been fighting with our time, talents, and money for the independence of the medical profession, but we have been oblivious to the same threat of free enterprise in other fields. It behooves us, therefore, to join hands with other organizations and instead of each being for one, let one be for all and go forth with a **unified offense**—our best **defense** against Socialism!

There is one bulwark of freedom left between us and Socialism. That is the Congress of the United States of America. This is the year to elect congressmen and senators. Some say we, as doctors, cannot afford to get into politics. I say we cannot afford to stay out of politics. (Speaking of politics, I heard a doctor's wife say the other day that her family was all mixed up. She was a Republican, her husband a Democrat, her baby was wet, her cow was dry and the dog was a Socialist. I asked "What do you mean, a Socialist?" She replied, "He just sits around and howls and howls all the day, does nothing and wants everything he can get his paws on.") Being a doctor is not our solitary duty as a citizen. Let us work for and support those candidates whom we know will preserve American freedom and medical freedom. Failing to do this we cannot justly complain of the consequences. We must be loyal to our country, our profession and our society.

Loyalty is a wonderful word in its true sense. It is something that cannot be bought; it has to be given. It must come from the heart and it resents selfishness in any form. Our country and our society need our loyal support now more than at any other time in past history—and, God grant, more than at any time in future history. In being loyal to our society in our present crisis, we cannot help but be loyal to our country. Let us give freely of our financial and moral support to the American Medical Association, because it has done more to ward off socialized medicine than any other organization in the country. Were it not for the work the Association has done, we would now be under the dictatorship of federal control.

Let us rise above any differences, petty jealousies, and dissensions that may creep in. We must be a united group so that, come what may, we can demand that the dignity of our profession be not lowered; that we be allowed to give the same tender and scientific care to our patients in the future as in the past. Let us be doctors first, last, and always. We should remember that we have rank and rank stands out and imposes obligations . . . I am reminded of an incident that happened recently on my way to Chicago to attend the A. M. A. Conference of State Officers and Committee of 53. I was standing in the aisle of the Pullman with several doctors as we entered the city and the porter brushed one off saying, "Is that all, Judge?" The doctor replied, "I guess so, but I am not a judge." The porter brushed him off a few more times and said, "Well, is that all, Reverend?" The doctor replied, "Yes, but I am not a preacher, I am a doctor." The porter's brush really started working and his face grinning, "Oh that's all right boss, I knew you were some kind of a face card." Never forget we belong to a profession, which, founded 400 years before Christ, was the chosen work of the Savior himself and stands today as the most lofty and far-reaching of all sciences.

The duty imposed upon this generation is the same as has been imposed upon all past generations—to be vigilant and resolute—to repel every insidious effort that may destroy our liberty and our orderly way of life. The alternative of the one is dictatorship and, of the other, the mob spirit of Communism. The security of our future will be assured, if we but take time to listen to the still, small voice that speaks to our heart and our conscience, and which tries to lead us to a higher and wiser humanity. From trials, errors and sacrifices of the past, we have gathered a deep and lasting philosophy and strength of wisdom that will guide future generations.

In closing, may I express the sincere wish for our country and our medical association in the years to come we shall have a succession of honorable men, with as steady advance in public service and scientific knowledge as has marked the years gone by. At the same time, let us remind ourselves that it is the duty of all of us to keep peace and pace with this changing world and to maintain justice without the sacrifice of our liberties. It is our duty to make the most and best of ourselves and opportunities, to live the life of a patriot and good citizen.

AMERICAN COLLEGE OF PHYSICIANS

Mississippi Chapter

PROGRAM

October 7, 1950, 1 p.m.
Silver Room—Heidelberg Hotel
Jackson, Mississippi
John G. Archer, B.S., M.D., F.A.C.P.
Governor for Mississippi, presiding.
Greenville, Mississippi

P. M.

1:00 Registration

1:30 The Development of Rural Medical Service—What Mississippi Is Doing About It—Felix Underwood, M.D., F.A.C.P., Jackson.

2:00 Aging in the Willis' Circle.
C. M. Mezy, M.D. (by invitation), Pathologist, Veterans Administration Hospital, Gulfport.

2:30 The Non-Arteriosclerotic Nervous Diseases of Old Age—Phillip Work, M.D., F.A.C.P., Long Beach.

3:00 Headache.
Lyle Motley, M.D., F.A.C.P., Assistant Professor of Medicine, University of Tennessee, Memphis, Tennessee.

3:30 Intermission

3:45 Experience with and Treatment of an Unusual Case of Enterococcal Endocarditis—John T. Lane, M.D., F.A.C.P., Chief of Medical Service, Veterans Administration Hospital, Biloxi.

4:15 The Treatment of Chronic Ulcerative Colitis by Diet—Phillip H. Jones, M.D., F.A.C.P., New Orleans, Louisiana.

4:45 A Discussion of Some of Our Current Problems in Nutrition. Robert E. Stone, M.D., Associate American College of Physicians, Associate Director, Nutrition Clinic, Hillman Hospital, Birmingham, Alabama.

Fifty-Year Club Address*

ANDY HALL, M.D.
Mt. Vernon, Illinois

In 1938, the Illinois State Medical Society, realizing that we had many physicians who practiced fifty years or more, many of whom were not active, and wishing to do them honor while they were living, authorized the organization of a Fifty-Year Club. Since then we have inducted over 700 members into our organization. At the present time we have 380 members. Each year invitations are sent to every living member asking him to attend a noon-day luncheon when the Illinois State Medical Society convenes. This luncheon is a complimentary affair given by the state society. Not only this, the Illinois State Medical Society pays for lapel buttons and nicely framed certificates for each member.

At these meetings, attended by from 85 to 100 old physicians, in addition to their wives or lady friends, each member is permitted to relate the most interesting or most amusing experience in his practice. It makes a very interesting and entertaining program.

The public generally does not realize the debt of gratitude it owes physicians. Visit almost any city of importance anywhere and see monuments and statues erected to commemorate men who have been prominent in politics, in war, and in other lines. Yet to the physician engaged in preventing diseases, relieving pain, and prolonging lives, one seldom sees a statue or monument erected to his honor.

Sometime ago I passed through the Capitol at Washington, D. C., where each state is permitted to erect statues of two of its citizens, illustrious for their historic renown or distinguished for civic or military service. Of the seventy-two contributed by the various states, only three are of physicians.

In this galaxy of immortals, Florida contributed Dr. John Gorrie, eminent physician and inventor of the ice machine and mechanical refrigerator, originally conceived for the purpose of lowering the temperature of fever patients.

The state of Georgia contributed a statue of Dr. Crawford W. Long, a distinguished physician living at Jefferson, Georgia, who discovered ether as an anesthesia in the year 1842, more than one hundred years ago.

The third statue of a physician was contributed by Kentucky, honoring Dr. Ephriam McDowell of Danville, Kentucky, as one of its two most distinguished citizens. Dr. McDowell followed the practice of medicine and surgery during his entire professional life, and successfully performed the first operation known as ovariotomy, in 1809.

When Christ walked on earth the life expectancy of a generation was twenty-one years. In 1860, the life expectancy of the United States was forty-one years. Since then, medical and allied professions, by observations, research and experimentation have discovered the causes of many diseases, the ways of transmission, ways of prevention and cure, and the application of this knowledge to our everyday life has prolonged the life expectancy of this country to sixty-eight years. Physicians have been able to prevent diseases, relieve pain, prolong life, and have added much to the sum of human happiness.

At the present time, the people of the United States are receiving better medical care than people of any other nation in the world. We have more physicians per 100,000 people than any nation in the world, except Palestine, where there has recently been an influx of refugee physicians from the European countries. We have more and better hospitals than any other country in the world. According to the reports from the various states' health departments and the United States Public Health Service, we had the least mortality last year per 1,000 people than any previous year in the history of the United States. The death rate was less than 10 per 1,000 people.

Notwithstanding, the physicians and the allied professions are rendering the most efficient service of any group of people in the world. We have some up-lifters, do-gooders, politicians, dreamers and crack-pots who think that the physicians are doing a very poor job and that they should be supervised by politicians from Washington. Bills are now pending in Congress which, if they become laws, will socialize the medical and allied professions similar to the conditions that now exist in Great Britain and other European countries where the activities of everyone are supervised from the "cradle to the grave."

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*Delivered before Mississippi Fifty-Year Club at Jackson, Mississippi, May 10, 1950.

Since socialization of the medical profession in Great Britain, morbidity and mortality have increased; loss of labor on account of sickness has increased; prices of the necessities of life have increased; taxes have increased; and malingerers have increased, burdening the physicians with examining those who need no medical care with giving them less time to treat those who really are sick.

Lenin said that socialized medicine is a key to the arch of the socialistic state, which is probably true. Great Britain, under its socialistic-labor government, has taken over the banks, coal mines, transportation, railroads and buses, lines of communication, electricity, gas, medical and dental professions, including the hospitals with all their endowments.

The people of Great Britain are living on rations that would not be tolerated in America. If you were a Britisher today, each **week** you would be permitted 1½ eggs, 3 ounces of butter, 6 ounces of margarine, 1 ounce of lard, 1 ounce of cheese, 1 ounce of bacon, 8 ounces of sugar, 6 ounces of meat, 2 ounces of corn beef, 2 quarts of milk laid at your steps. If you were a Britisher with a wife and two children drawing a salary of $2800 per year, you would be permitted exemption of $1750 and you would pay the government a tav of $288 on the remainder. In the United States, a man with the same size family with a salary of $2800 would pay an income tax of $26.

Only through our great American free enterprise system is it possible for this nation to maintain the highest standard of living ever known to a whole group of people and to provide sufficient surpluses to feed, clothe and rehabilitate millions of people in war-stricken areas and rebuild a war-torn world.

I congratulate the Mississippi Medical Society upon inaugurating a Fifty-Year Club that old physicians may be honored while they are living. Oftentimes we see men and women engaged in worthwhile endeavor who are real benefactors to the community in which they live, but we never stop to express our appreciation or encourage them while they are living. When they are dead we are profuse with our praises and generous with our flowers. If we have compliments or flowers to give to our friends, it is much better to give them while they are living.

"If with pleasure you are viewing any work
a man is doing,
And you like him or you love him, tell him now.
Do not withhold your approbation until the
Parson makes oration,
And he lies with snowy lilies on his brow.
For then no difference how loud you shout it
He will not know one thing about it.
He will not even know how many teardrops you
have shed.
If you think that praise is due him
Now's the time to give it to him
For he cannot read his tombstone when he's
dead.

"More than fame and more than money,
Are the comments kind and sunny,
And the hearty, warm approval of a friend.
It gives to life a savor, makes us stronger,
braver
And gives us strength and courage to the end.
If he has won your praise, bestow it,
If you like him, let him know it.
Let the cheerful words of approval be said.
Do not wait until life is over and he sleeps
beneath the clover,
For he cannot read his tombstone when he's
dead.

The old physicians who began practicing 50 or 60 years ago were not as astute business men as our physicians of today. They kept no office help, they kept no clerks or bookkeepers to send out statements. If they kept any books, they kept them themselves. They seldom sent out a statement, unless at the end of the year and the result was that many of their bills were never paid.

Fifty and sixty years ago the last bill to be paid was usually the doctor's bill. Many of the old doctors lived from hand to mouth. At the present time in the state of Illinois members of our medical society contribute $5.00 each year to a benevolent fund, from which $30.00 to $50.00 per month are paid to twenty-five or thirty old physicians who are down and out physically and financially.

I have approximately twenty-five to thirty thousand dollars on my books, accounts that have never been paid and never will be paid. Recently I was talking to a physician in my town who has been practicing more than fifty years, who told me he had more than forty thousand dollars of unpaid accounts on his books.

"THE DOCTOR AND THE ANGEL"

"Last evening I was talking
To a Doctor aged and gray,
He told me of a dream he had;
I believe it was Christmas Day.
While snoozing in his office,
A vision came to him:
He saw an Angel enter,
Clad in garments white and new.
Said the Angel, "I'm from Heaven,
The Lord just sent me down
To bring you up to Glory
And put on a golden crown.
You've been a friend to everyone,
And worked both night and day.
You've treated many thousands,
And from few received your pay.
So we want you up in Heaven,
For you've labored very hard.
The Lord is now preparing
Your eternal just reward.

"So the Angel and the Doctor
Started for Heaven's gates
But while passing near to Hades
The Angel murmured, "Wait,"
He said, "I've something to show you,
It's the hottest place in Hell,
Where those who never paid you
In torment will always dwell."
Behold the Doctor saw there
His old patients by the score
And grabbing up a chair and fan
He could wish for nothing more.
He was bound to sit and watch them
As they sizzled, singed and burned,
His eyes would fall on debtors,
Whichever way he turned.
So the Angel said, "Come on Doctor,
You've the Pearly Gates to see."
But the Doctor only shouted,
"This is Heaven enough for me."

The old doctors of fifty or sixty years ago experienced many hardships not encountered by present-day physicians. The nights were never too dark, the roads never too muddy, the weather never too cold, nor the patient too poor, but that they promptly responded to all calls of distress. They kept abreast with all the new discoveries and remedies in the prevention and cure of diseases by taking good medical journals, buying the latest books and attending medical societies and refresher courses. Thus equipped, they lightened the burdens of the mind-weary and cheered the dubious hearts of the infirm with their wise philosophy. They relieved suffering bodies, pointed to safety through the snares and pitfalls of an ever-hazardous existence, and where possible postponed and averted the inevitable tragic end.

They took no personal quarrel with life or fate and accepted defeat or victory with the equanimity and fortitude of the happy warrior who is invincible in soul.

They cultivated a morality and personality that has made them valuable citizens in the community in which they live—a personality that found expression in the warm handclasp, words of cheer to a discouraged brother, quiet deeds of charity, helpfulness and friendship—friendship, that most comforting flower found along the rough highways and the sodden quagmires of life, friendship that brings light, relief and happiness to every fellow traveler.

God does not pour all His sunshine into corn and fruit and flowers. He scatters the rays of His countenance prodigally over the universe. God paints opalescent pictures of mirage above the palpitating heat of the desert and sprinkles sunbeams like diamonds over the bosoms of lakes which bedeck the verdant garb of nature. He drapes shimmering webs of aurora about the cold shoulders of the Poles and lights the lanterns of the Great Bear as he prowls in ceaseless vigilance around the North Star. He spangles the canopy of night with the quivering sparks of the Milky Way and with the giant suns of the Pleiades. He silvers the landscape with beams reflected from Cynthia's inconstant face and draws the crimson cincture of the West across the sleeping glooms of the sun.

The Daughter of Dawn rises silently from her dark boudoir, climbs the steps of the Orient and flings wide the gates of morning. On soundless wings she speeds exultant over the vast terrain and wakens the birds to herald with ecstatic voice the coming of their King who floods the world with refulgent gold; a magnetic splendor to which every plant and animal clan turns in warm and happy gratitude for revival, refreshment, and repair.

No ray of light is wasted, nor a single sunbeam lost, but all contribute to the welfare and happiness of earth-born life. So with mankind, anyone, who by the use of treasures, knowledge, or personality is able to smooth one wrinkle from the brow of care, or change one moan or sob into blithesome song; who can wipe away one tear and in its place put a shining jewel of joy and happiness, is a benefactor to mankind. Such has been the work of the old pioneer physicians and others who have followed in their footsteps. They sided with the weak and those in distress, and with willing hands gave aid to the sick and despondent. With loyal heart and firm soul they quietly performed their protective and merciful missions and discharged faithfully every public and private trust. We can bestow no greater praise than this.

Retropubic Prostatectomy*

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SINCE 1900 the question as to how to tackle an obstructing prostate has been a battle of words. The first twenty-five years of this century the wordy battle raged between advocates of suprapubic and perineal routes. The results obtained by the masters in each approach were in the main good, but left much to be desired. The mortality in the suprapubic and the morbidity in the perineal were by no means insignificant and led many a prostatic to procrastinate until irreparable renal damage had been done.

In 1931 the transurethral resection was introduced and gave hope to many that the prostatic millennium had arrived, but the hope of the early workers can scarcely be considered fulfilled. Despite many ingenious improvements in armamentarium, the transurethral approach has not secured widespread acceptance for the treatment of all prostatic hypertrophies. The last decade has seen the battle resolve itself into a triangular conflict between the three schools of thought, **suprapubic, perineal and transurethral.** The viewpoint most commonly adopted is that the transurethral approach should be employed in the fibrosis and minor hypertrophies; while the larger hypertrophies should be dealt with by open operation, either suprapubic or perineal, according to the operator's preference and competence in each route. Those who so strongly advocate the transurethral route claim all types of glands could be treated this way regardless of size. The facts are that a large gland cannot be completely removed by the average urologist in a short period of time. Also, when a complete removal of the gland is attempted perforation of the capsule as well as incontinence is likely to occur.

The first reference to a suprapubic extravesical prostatectomy recorded in the literature was by van Stockum of Rotterdam, in 1909. A vertical incision was made along the side of the prostate off the mid-line and the prostate gland was then enucleated. Much bleeding occurred, for which the urethra was packed off.

In 1924 Otto Maier of Innsbruck reported a series of four cases done by the inguinal extravesical approach. His incision was like that commonly used in herniorrhaphy. The deep epigastric artery and veins were divided. The prostatic plexus was then picked up and divided. This is said to have been the most difficult part of the operation. The capsule was incised and the gland enucleated laterally. A catheter was passed into the bladder and capsule sutured.

In 1934 Jacobs and Casper of this country, after anatomical study of the space of Retzius and the periprostatic region set forth to devise an operation which would allow the enucleation of the lateral lobes of the prostate and leave the urethral canal intact. The lateral lobes were removed fairly well, but the middle lobe could be only partially removed. Their case remained dry while the catheter was in situ for six days, but on the seventh day when it was removed much bleeding occurred and an abdominal fistula developed. There is not enough blood supply to the urethra to maintain life when its surrounding prostate has been removed.

With this triangular word-battle as to the merits of each route being at its height, Mr. Terence Millin of London, England, introduced another approach to the prostate gland. In August, 1945, Terence Millin performed his first retropubic extravesical prostatectomy on a patient described as a poor risk: age 72, grossly infected from catheterizing himself for three years, blood urea 200 mg. per cent. His recovery was remarkable. By 1947 Millin had removed 375 prostates using this approach. In 1947 he presented his operation to the

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American Urological Association in Buffalo, New York.

The American urologist seeking the answer to the old controversy started using this procedure.

In 1949, Lich, Grant and Maurer of the Department of Urology at University of Louisville School of Medicine, reported a survey of 65 retropubic and an equal number of perineal prostatectomies, both groups being consecutive, unselected patients without regard to size of gland or age. The same type of anesthesia was used, namely, sodium pentothal alone and in combination with spinal. The average age for the retropubic group was 68.1 years while the perineal group was 68.8 years. Vesical catheter drainage in perineal group was 10.1 days compared to 6.0 days in the retropubic group. The postoperative hospital stay was 17.9 days in the perineal group and 12.3 days in the retropubic group. The perineal group had blood transfusion in 66.1 per cent while the retropubic group had only 12.3 per cent. The temperature of perineal group was an average of 100 degrees Fahrenheit for five days while that of retropubic group was 99.4 degrees. The perineal group had seven stresses incontinence averaging 19 days. In the retropubic group there were three cases of stress incontinence for less than five days. The glands averaged 40 grams in each group.[12]

Moore from the Department of Urology at the University of Tennessee Medical School reports a comparison of 46 cases of hypertrophy of prostate treated by the three approaches; namely, transurethral, suprapubic, or transvesical, and retropubic or extravesical. These were unselected cases and he summarized as follows: "The impression has been gained from this brief experience that the patients are more comfortable in the immediate postoperative period, healing is prompt, the operation incurs no greater risk and the period of hospitalization is shorter than in these dealt with suprapubically and about equal to those treated transurethrally".[7] He further states that the early functional results of suprapubic and retropubic prostatectomy are both somewhat better than after transurethral prostatectomy, and that complete removal of adenomatous prostatic tissue is seldom obtained transurethrally regardless of the degree of thoroughness with which a resection is performed.

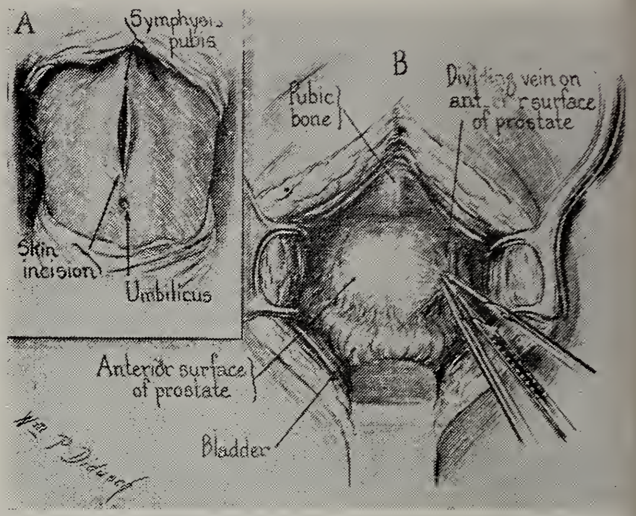
A
Symphysis pubis
B
Pubic bone
Dividing vein on ant. surface of prostate
Skin incision
Umbilicus
Anterior surface of prostate
Bladder
Wm. P. Didusch

Fig. 1—(A) Skin incision.
(B) Exposure of vessels in adipose tissue

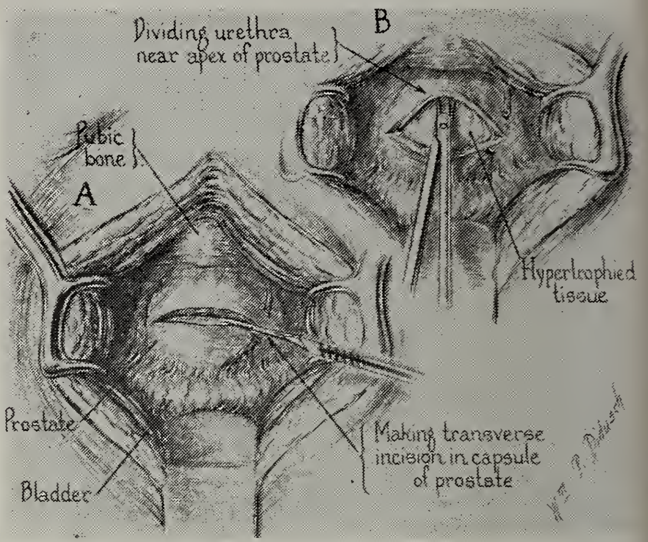
Dividing urethra near apex of prostate
B
Pubic bone
A
Hypertrophied tissue
Prostate
Bladder
Making transverse incision in capsule of prostate
Wm. P. Didusch

Fig. 2—(A) Incision in the capsule between the ligated vessels.
(B) Division of the urethra at the apex within the prostatic capsule.

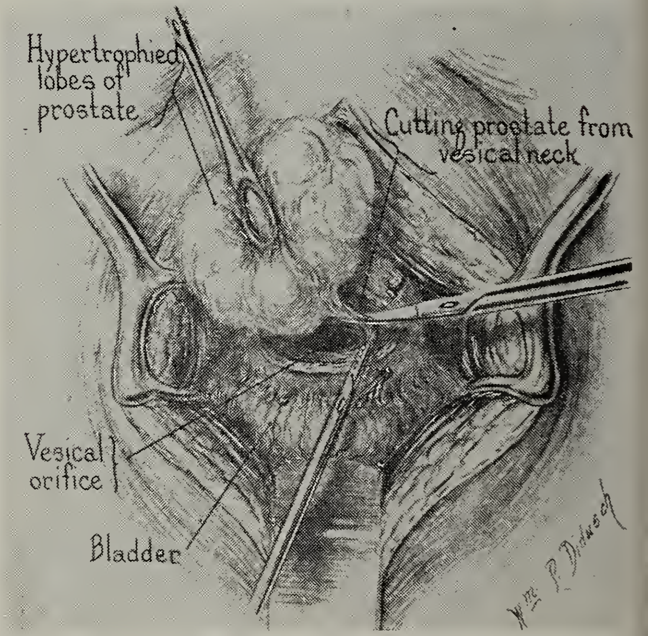
Hypertrophied lobes of prostate
Cutting prostate from vesical neck
Vesical orifice
Bladder
Wm. P. Didusch

Fig. 3—The enucleated gland delivered being trimmed from the vesical neck.

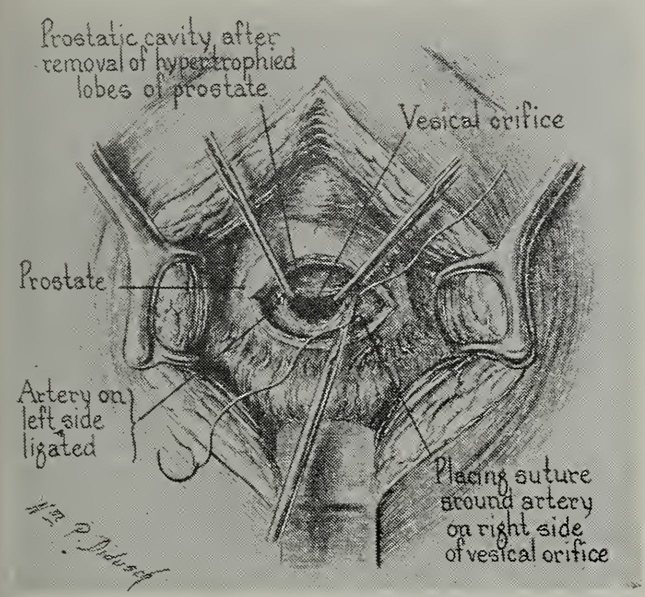
Prostatic cavity after removal of hypertrophied lobes of prostate
Vesical orifice
Prostate
Artery on left side ligated
Placing suture around artery on right side of vesical orifice
W^m P. Didusch

Fig. 4—Ligation of the prostatic arteries.

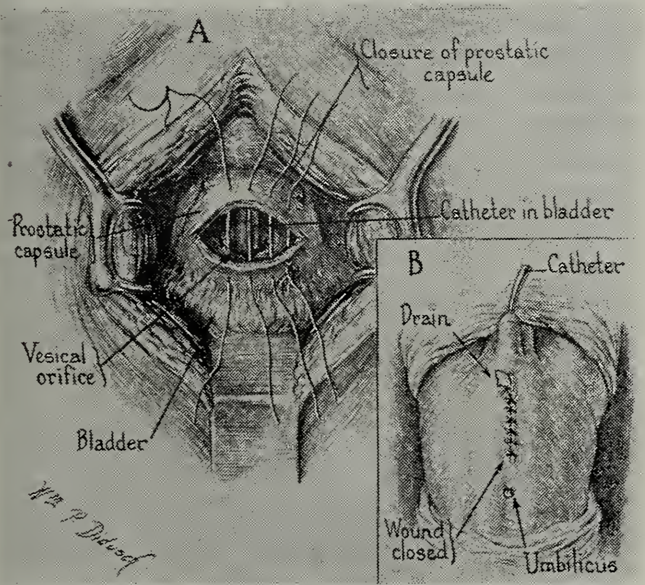
A
Closure of prostatic capsule
Prostatic capsule
Catheter in bladder
Vesical orifice
Bladder
B
Catheter
Drain
Wound closed
Umbilicus
W^m P. Didusch

Fig. 5—(A) Closure of prostatic capsule over a retention catheter.
(B) Skin closure with cigarette drain.

Anatomically the retropubic approach is ideal in that when the recti muscles are separated, one is confronted with extraperitoneal fatty tissue which passes upward in front of the bladder between the umbilical arteries as far as the umbilicus extends posteriorly to the hypogastric arteries. (Figure 1 B). This fatty tissue is not particularly vascular and only occasionally during prostatectomy has bleeding been of sufficient extent to warrant hemostasis. Coursing over the anterior surface of the prostatic capsule is seen one or more vessels, (Figure 10) the preprostatic veins, which are branches of the pudendal plexus and a part of the prostatic venous plexus most of which lies within the lamellae of the prostatic sheath. This venous plexus is most prominent anterolaterally, (Figure 1 B) and joins the large, thin-walled veins which are collected for the most part in the sulcus between the bladder wall and prostate to form the prostaticovesical plexus which eventually empties into the hypogastric vein. The prostate is invested in a fibrous sheath derived from the pelvic fascia which closely invests the prostate in the lateral

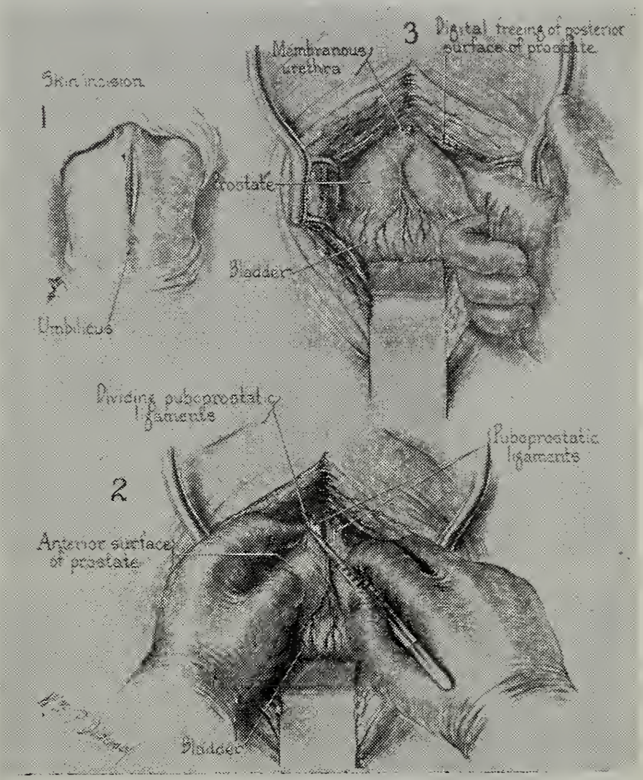
1
Skin incision
Umbilicus
2
Dividing puboprostatic ligaments
Puboprostatic ligaments
Anterior surface of prostate
Bladder
3
Membranous urethra
Digital freeing of posterior surface of prostate.
Prostate
Bladder
W^m P. Didusch

Figure 6

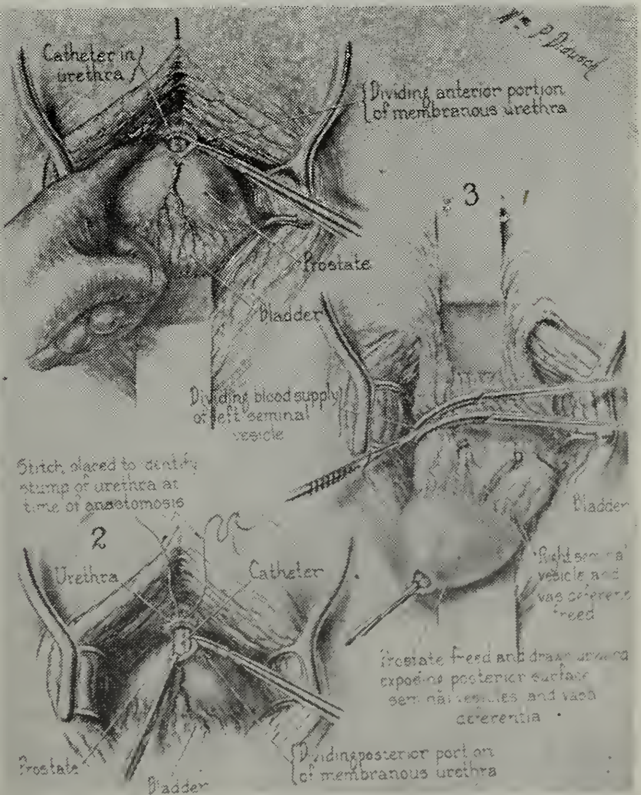
W^m P. Didusch
1
Catheter in urethra
Dividing anterior portion of membranous urethra
Prostate
Bladder
Dividing blood supply of left seminal vesicle
3
Bladder
Right seminal vesicle and vas deferens freed
Prostate freed and drawn upward exposing posterior surface seminal vesicles and vasa deferentia
2
Stitch placed to identify stump of urethra at time of anastomosis
Urethra
Catheter
Prostate
Bladder
Dividing posterior portion of membranous urethra

Figure 7

The Foley catheter is removed in 10 days.

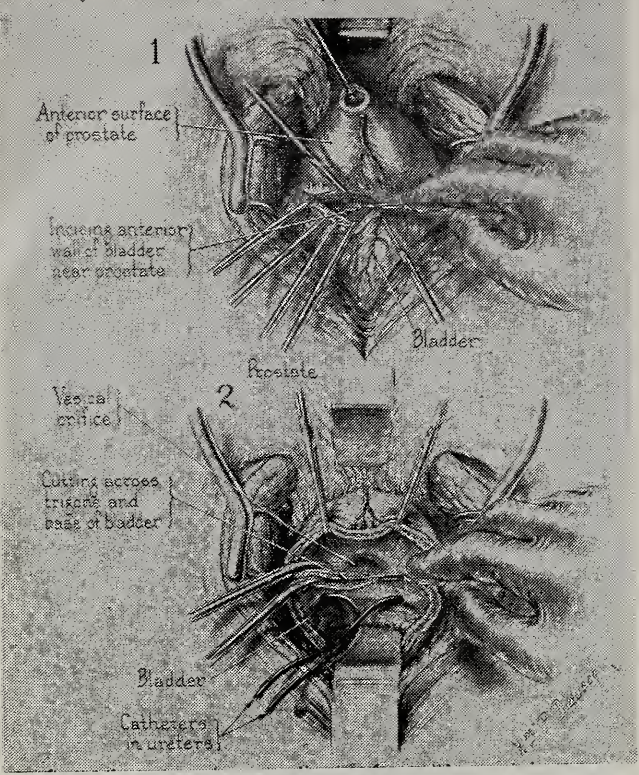
1
Anterior surface of prostate
Incising anterior wall of bladder near prostate
Bladder
Prostate
2
Vesical orifice
Cutting across trigone and base of bladder
Bladder
Catheters in ureters

Figure 8

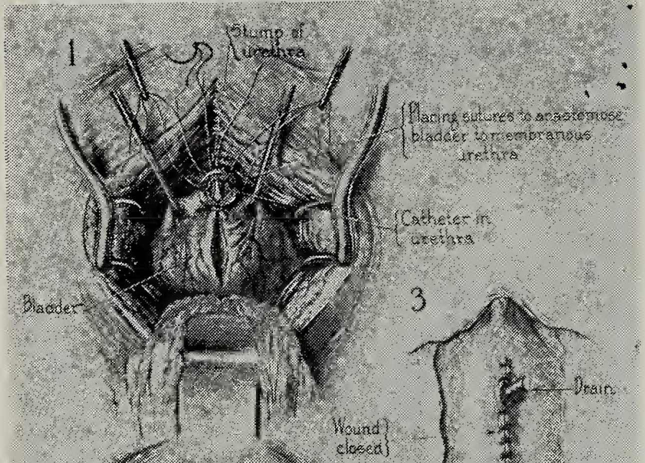
1
Stump of urethra
Placing sutures to anastomose bladder to membranous urethra
Catheter in urethra
Bladder
3
Drain
Wound closed
2
Urethra
Anastomosis of bladder to membranous urethra completed
Closure of anterior wall of bladder
Bladder

Figure 9

and posterior aspects, the hypogastric sheath of Farabeuf. Anteriorly, this sheath is condensed and projected along with some smooth muscle bundles from the true prostatic capsule to the inferior surface of the pubis as the puboprostatic ligament. (Figure 10). In these ligaments, particularly at their base, lie some of the large thin-walled veins of the prostate sheath. These structures and their contained blood supply are of importance, particularly in executing a radical retropubic prostatectomy. The puboprostatic ligaments must be severed completely in the radical operation to permit the prostate to be freed and to expose the urethra as it projects through the triangular ligament. Posterior to the prostate, which is well visualized in the radical retropubic prostatectomy, there is a plane of areolar tissue between the sheath of the prostate and Denonvilliers' fascia which is of advantage, since it permits rapid separation of the prostate without fear of rectal penetration after the urethra is severed and the apex of the gland is elevated.

It is interesting to note that when the puboprostatic ligaments are cut the prostate immediately moves cephalad and there can be visualized a segment of the urethra extending between the triangular ligament and prostate approximately three fourths to one inch in length. Hence in radical retropubic prostatectomy the urethra can be severed well forward of the paxe of the prostate so that all prostatic tissue is removed and there remains a sufficient length of urethra to afford a most satisfac-

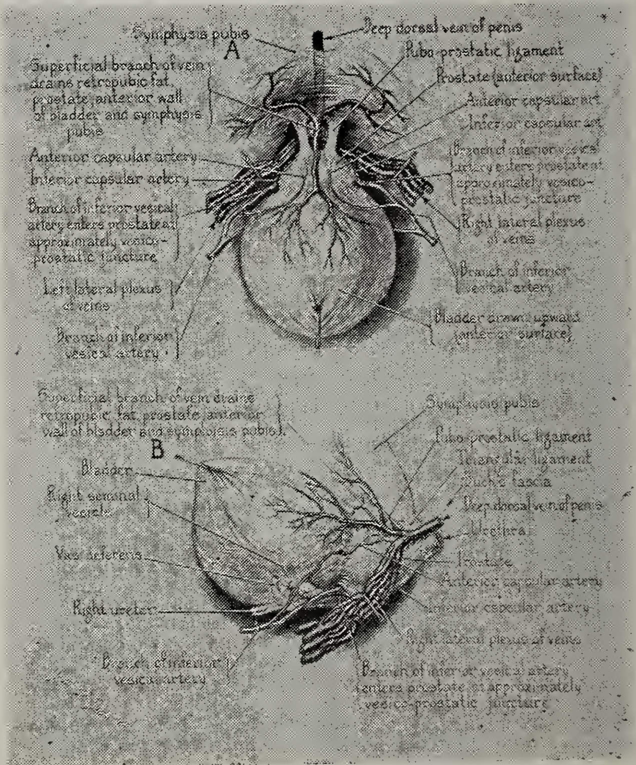
Symphysis pubis
A
Deep dorsal vein of penis
Pubo-prostatic ligament
Prostate (anterior surface)
Superficial branch of vein drains retropubic fat, prostate, anterior wall of bladder and symphysis pubis
Anterior capsular art.
Inferior capsular art.
Anterior capsular artery
Inferior capsular artery
Branch of inferior vesical artery enters prostate at approximately vesico-prostatic juncture
Right lateral plexus of veins
Left lateral plexus of veins
Branch of inferior vesical artery
Bladder drawn upward (anterior surface)
Superficial branch of vein drains retropubic fat, prostate, anterior wall of bladder and symphysis pubis
Symphysis pubis
Pubo-prostatic ligament
Triangular ligament
Buck's fascia
B
Bladder
Deep dorsal vein of penis
Right seminal vesicle
Urethra
Vas deferens
Prostate
Anterior capsular artery
Right ureter
Inferior capsular artery
Right lateral plexus of veins
Branch of inferior vesical artery
Branch of inferior vesical artery enters prostate at approximately vesico-prostatic juncture

Fig. 10 Composite illustrations from injected specimens, showing arterial and venous circulation of prostate, bladder and retropubic area. *A*, anterior view; *B*, lateral view.

tory urethrovesical anastomosis. The reason it is not visualized in the radical perineal prostatectomy is due to the operative position and the necessity of dividing the urethra before the puboprostatic ligamênt is reached. Within the sheath of the prostate is the true prostatic capsule which consists of a muscular coat of interlacing fibers and fibrous tissue along with the compressed layers of non-adenomatous prostatic tissue. As we all know, it is below this layer that the cleavage plane for the enucleation of the adenomatous prostate is established.

Surgically, the significant anatomical facts to be considered in the retropubic prostatectomy of Millin are: 1) the fatty tissue in the retropubic area which is relatively avascular; 2) the prostatic sheath which is highly vascular with large, thin-walled veins scattered throughout its lamellae and more prominent anterolaterally; 3) the puboprostatic ligaments which are vascular and may be a source of troublesome bleeding in the radical operation; and 4) the thin prostatic capsule within which lies the cleavage plane for enucleating the prostatic adenoma.

This paper is based on the results of 55 cases of prostatectomy done by the retropubic approach including conservative prostatectomy and radical prostatectomy. These patients were consecutive cases without regard to size of gland. The smallest was 15 grams associated with a marked bladder neck contracture. The largest gland was 220 grams. A wedge-shaped piece of tissue was removed from the posterior surface of the bladder neck if there was any doubt about an adequate opening. Many of these 65 patients had had from one to three transurethral resections within the past five years (only one was a case that I had resected). Each patient when asked, after he was discharged, which type of operation he preferred, each replied that the cutting operation was the more comfortable.

No case of incontinence has been observed. Three cases of prostatic calculi were encountered: one had a single large calculus and two had multiple small calculi. Except for a difficult dissection of the bland due to adhesions, these were no different from the others.

The most striking feature of retropubic prostatectomy is the well being of the patient postoperatively. There is no shock, no tenesmus nor severe pain in the region of the bladder. The patients feel well enough to get out of bed early. Catheter drainage has been used for varying lengths of time. The shortest time was one day, the longest was seven days. One of these had a secondary hemorrhage; this was the only incident of secondary hemorrhage in the series. He was readmitted because his hemorrhage occurred on the fourteenth postoperative day. The average hospital stay after prostatectomy was nine days. The incidence of epididymitis was about the same as for any other type of prostatectomy where preliminary ligation of the vasa is not done. No vas ligation was done on any of these 55. There were two deaths in this series. One died within eighteen hours after surgery from auricular fibrillation which could not be controlled. The other death occurred on the eighth postoperative day from a pulmonary embolus presumably. He was getting along fine with the catheter out and voiding freely. While sitting on the bed after finishing his evening meal and talking about going home the next morning, he suddenly collapsed. Postmortem examination declined by his family.

The operation is not as easily executed as most writers describe. I find it technically difficult at times but the well being of the patient makes me think it is the operation of choice, especially in glands of 75 grams and up. The greatest criticism of retropubic prostatectomy I find in the literature is the fear of osteitis pubis as a complication. I have had no experience with this condition. It did not occur in any of my patients postoperatively. Millin of London does not mention it as a complicating factor. Dr. Lich of Louisville Medical School told me in a personal communication that he had not noted osteitis pubis as a troublesome factor in 500 cases. Osteitis pubis has been recognized as a clinical entity since 1924, when Edwin Beer of New York first described such a condition as an inflammatory disease of the pubic bone beginning in the symphysis and rapidly involving the pubic rami and even the ischia. It is a self-limiting disease. It is characterized by intense pain along the inner aspects of the thighs, that is along the adductor muscles. Later in the course of the disease there is x-ray evidence of bony changes. Seven cases of osteitis pubis are reported by Lavalle and Hamm in Journal of Urology, January, 1949.[4] Six of these had a two stage suprapubic prostatectomy and one had a one stage suprapubic prostatectomy.

Rosenberg and Vest from the Department of Urology, University of Virginia, report four cases of osteitis pubis in 1948[9]. Two of these cases followed retropubic prostatectomy and two followed transurethral prostatectomy. This condition has been known to follow most any type of pelvic surgery; hysterectomy and salpingectomy in female, as well as rectal and bladder surgery in lower pelvis.

Summarizing the various approaches:

Perineal Prostatectomy

1. Difficult technique.
2. Damages important structures.
3. High percentage of incontinence.
4. Loss of sexual activity.
5. Requires much time in getting anesthetized patient in position.
6. Few urologists familiar with this technique.

Suprapubic Prostatectomy

1. Disturbs a functioning bladder.
2. Marked tenesmus and discomfort postoperatively.
3. High mortality rate.
4. Operation done without vision.
5. Bleeding difficult to control.
6. Cannot do a radical procedure when indicated.

Transurethral Prostatectomy

1. Not suitable for large glands.
2. Sometimes incontinence.
3. Incomplete removal in many instances with recurrences.
4. Cannot do a radical when indicated by this method.
5. Intravascular hemolysis with lower nephron nephrosis.
6. Urethral stricture, hypospadia require perineal button hole.
7. Time of operation one hour or more.
8. Requires numerous gadgets, bulbs, loops, batteries and fluids.
9. Bleeding hard to control at times.
10. Incomplete emptying of bladder at times with pyuria.
11. Prostatic calculi difficult to remove if large.

Retropubic Prostatectomy

1. Does not damage any other organ or structure.
2. Permits removal of large and small glands.
3. Absence of shock.
4. Permits complete inspection of prostatic cavity.
5. No incontinence.
6. No stricture following procedure when section removed from bladder neck.
7. No loss of sexual activity.
8. Radical prostatectomy can be done with this approach.
9. Operation time less than one hour.
10. No gadgets to get out of order.
11. Bleeding can be ligated or fulgurated.
12. Supine or slight Trendelenburg position.
13. Patient walking usually on third day, without catheter.
14. Prostatic calculi can be removed.
15. Osteitis pubis? More apparent than real.

Technique for conservative prostatectomy:

Patient in supine or slight Trendelenburg position. A vertical incision was made as in Figure 1A. Recti muscles separated and peritoneum stripped up off the bladder with a wet sponge. A small gauze pack placed lateral and somewhat posterior to the prostatic urethra on each side. A self-retaining retractor is placed in the wound, and by means of a tail piece of the Millin rectractor or a flexible ribbon retractor the bladder is retracted upward. Surface veins are ligated and cut. (Figure 1 B). A transverse incision is made over the prostate, (Figure 2 A) cutting well down to the adenoma. This incision is extended on each side to such an extent that the gland can be delivered through the wound. Continuous suction is applied to keep the field clear. Allis clamps are placed on each edge of this wound to produce hemostasis. The curved scissors are used to separate the gland from the capsule. The urethra is cut anteriorly, (Figured 2 B) and the apex of the gland is lifted up and then the enucleation is completed. (Figure 3) Usually there are two arterial bleeders on the lateral walls which are ligated. (Figure 4) The entire prostatic cavity is inspected carefully. If any tissue is left it can be removed at this point. The vesical neck is inspected and a wedge shaped piece removed if necessary. (Figure 4.)

When all bleeders are controlled a Foley catheter is inserted through the urethra and guided into the bladder. The transverse wound in the capsule is then closed with interrupted chromic No. 1 catgut, (Figure 5) placing the sutures close together, thus forming a water tight closure. A small Penrose drain is left in the lower angle of the wound. The balloon is inflated in the bladder. The wound is closed in layers.

I prefer ligation rather than fulguration for the bleeders, sometimes a combination is used. Occasionally Gelfoam is placed over the suture line when there is excessive oozing. This oozing is troublesome when an attempt is made to control it with sutures. The Penrose drain helps take care of this condition.

Radical prostatectomy technique:

The same incision as for the conservative prostatectomy. This procedure is best done by inserting a regular French catheter into the bladder pre-operatively. The puboprostatic ligaments are cut (Figure 6, 2) on each side allowing the prostate to move cephalad, thus exposing the urethra (Figure 7, 2). An incision is made partially severing the urethra which is well identified by the indwelling catheter as in Figure 7. A suture is placed in the distal urethra for the purpose of identifying the urethra later. The catheter is removed or cut and the urethra is completely severed which allows the apex of the prostate to be lifted up. (Figure 7, 3). A small pack is placed over the cut urethra to control the bleeding in this area. The apex of the prostatic capsule is caught with a clamp which is used for light traction upward. ,(Figure 7). By means of blunt dissection the prostatic capsule is dissected free, exposing the vasa and seminal vesicles which are clamped and ligated. (Figure 7, 3). The anterior bladder wall is then incised proximal to the adenoma (Figure 8, 1) exposing the trigone and ureteral orifices. A ureteral catheter is placed in each ureter (Figure 8). The bladder incision is extended across the posterior bladder floor between the ureteral orifice and the adenoma (Figure 8, 2).

The bladder incision is closed vertically in a manner similar to the Ramstedt operation leaving a small opening to be anastomosed to the urethra (Figure 9). A Foley catheter is passed through the urethra and guided into the bladder. The balloon is then inflated and traction applied from below to aid in completing the anastomosis (Figure 9, 1). It is not necessary to suture the complete circumference of the urethra, usually two lateral and two anterior will suffice. The abdominal wound is closed the same as was described for the conservative procedure.

Summary

1. The literature is briefly reviewed.
2. Fifty-five cases of retropubic prostatectomy are reported.
3. Techniques of conservative and radical prostatectomy are described.

I wish to express my deep appreciation to Dr. Robert Lich, Jr., Department of Urology, Louisville Medical School; to Dr. Joseph Memmelaar of Bangor, Maine; and to Drs. Francis A. Beneventi and Gustav Nobach, Department of Anatomy, Cornell University, New York, for allowing me to reproduce their artists' drawings as presented in this paper.

Discussion

Dr. R. F. Sharp ( )—Dr. Myers richly deserves our highest commendation not only for the excellent manner in which he has presented his subject, but also for the remarkable clinical results obtained with this series of 55 retropubic prostatectomies. His mortality in this series of unselected consecutive cases compares favorably with that reported in numerous series both in this country and abroad. His clinical results have left little to be desired. The complete absence of the dreaded complication osteitis pubis in his series, speaks well for his technique and his luck. It has been the fear of the complication that has made many urological surgeons reluctant to resort to the retropubic operation for the relief of prostatism. The variation in incidence of this complication is as difficult to understand as is the reason for its occurrence.

In Moore's report on a series of 46 consecutive cases of retropubic prostatectomy, 17 per cent developed osteitis pubis. In contrast to this, Dr. Campbell, resident at Shreveport Charity Hospital, is now in the process of reviewing all the retropubic prostatectomies done in Shreveport. To date there have been 365 such operations with five deaths and only one case of osteitis pubis. In this series there were two cases in which a sponge was inadvertently left in the wound, one for a period of 18 months, neither of which developed osteitis pubis.

At Charity Hospital in New Orleans, approximately 118 retropubic prostatectomies have been performed with two deaths and nine cases of osteitis pubis. This complication is frequently noted in patients who otherwise have an ideal convalescence. At present the prophylactic treatment consists in the observance of sound surgical principles plus the use of antibiotics and chemotherapeutic drugs. Among the special precautions to be observed is first of all the complete avoidance of all forms of trauma to the pubic bone. Fulguration should be used sparingly if at all and as few sutures through the prostatic capsule as is compatible with good hemostasis.

Dr. Edgar Burns who has done 60 selected cases in his private practice without an incident of osteitis pubis, feels that the suprapubic Penrose drain should be left in until all drainage from the wound has stopped. Recent reports indicate that this complication is less common than it was in the earlier series.

The number of retropubic prostatectomies performed since Mr. Millin's report of 375 cases in 1947 clearly indicates that many of us were not completely satisfied with any of the three methods, namely, suprapubic, perineal and transurethral prostatectomy. The location and anatomy of the prostate is such that removal and control of bleeding is difficult at times with any procedure. It is only by making use of the procedure best suited to the individual case that we may hope to attain any degree of perfection in handling all types of prostatism. Retropubic prostatectomy is, in my belief, a permanent addition to our urological armamentarium. For those of us not trained in perineal prostatectomy it should be especially useful, since radical prostatectomy offers the only hope of cure for early carcinoma of the prostate.

Some men who were formerly doing their open operations by the perineal route have expressed a preference for the retropubic operation for the radical prostatectomy and the enucleation.

Memmlaar reports 40 cases of radical retropubic prostatectomy with one death and one mild case of osteitis pubis. His and other reports indicate that radical retropubic prostatectomy is only moderately more difficult than enucleation and that convalescence is just as smooth.

Lich used the retropubic approach to correct congenital obstruction in infants and children. He varied the technique only in that a longitudinal incision was made in the prostatic capsule instead of the customary transverse incision. The procedure, as described by him, was illustrated with actual photographs demonstrating that values in the posterior urethra and the bar formation at the bladder neck were readily accessible by this route.

Admitting that retropubic prostatectomy is a valuable adjunct in dealing with prostatic obstruction, when should it be used?

Dr. Myers and many others have demonstrated that it is applicable to all cases of benign prostatic obstruction as well as early carcinoma of the prostate. I have no criticism to offer of those making such wide use of this procedure, for after all we have been in the process of learning how to do the operation and what results can be expected. I have no reluctance in giving up to a large degree the suprapubic prostatectomy; however, transurethral resection, which has served me so well in the past, is still my preference except for large adenomas, early carcinoma and some cases of hypertrophy with marked prostatic calculi. The mortality figures favor transurethral resection by a ratio of approximately 1:4 and osteitis pubis as a complication of transurethral resection is a rarity.

The choice of procedure between transurethral resection and retropubic prostatectomy should depend upon the skill of the operator with each of these methods.

Dr. Raymond F. Mayer (899 Madison Avenue, Memphis 3, Tennessee): I wish to thank the Mississippi State Medical Assocation for the honor of appearing before you and Doctor Myers for the privilege of discussing his very interesting paper. The technique of retropubic prostatectomy as presented by him, except for a few minor modifications, is essentially the same as originally described by Millin. The latter in a recent Urologists' Correspondence Club letter reports that he has performed the procedure 1033 times, and several of his European colleagues have topped the 500 mark, which he cites as convincing evidence that at least some urologists are pleased with the operation.

Prior to the popularization of this approach to the prostate, great stress was placed upon the importance of avoiding the space of Retzius because of its vulnerability to serious infection. Doctor Myers reports fifty-five cases of retropubic prostatectomy without a single incidence of osteitis pubis, and similar results have been noted by others.

Early in our experience with the operation osteitis pubis proved to be the most disturbing complication encountered with an incidence of 17 per cent in the first forty-six cases as reported by Moore. Vest, Bacon and others have experienced this serious complication, and, at a recent meeting of the Memphis Urological Society, Higgins of Cleveland stated that he had discontinued the procedure as he thought the risk of a possible complicating osteitis pubis, which would result in prolonged disability, was too great to take in his private practice.

The sulfonamides and antibiotics have been given a large share of the credit for making prostatectomy through the space of Retzius possible. Kirkland of Australia and Short of this country have offered the speculation that the antibiotics, by depriving the body of some reactive resistance, might be playing a part in the etiology of osteitis pubis, since this complication was rare following similar procedures such as repairing ruptured urethra, etc., before these agents were available. Interestingly enough, for some as yet unexplained reason, the incidence of this unfortunate complication in our experience rather abruptly dropped to a negligible figure the latter part of 1948 and has remained so until the present time, although the operation has been performed in increasing numbers. This probably indicates improvement of technique and the role it plays in the production of this condition.

As Doctor Myers has pointed out, the operation is technically somewhat more difficult to perform than the conventional suprapubic prostatectomy, but it is agreed that the end results justify the procedure. Occasionally considerable trouble is encountered with bleeding from the venous plexuses on the anterior surface of the prostatic capsule which can be the chief source of blood loss resulting from the procedure. Goodyear and Beard recently measured the blood loss incident to the various methods of surgically correcting prostatic obstruction and reported the greatest amount (640 cc.) following retropubic prostatectomy.

Lich has called our attention to the value of the retropubic approach for the surgical correction of congenital vesical neck obstruction, stating that the prostate in this age group is very mobile and excellent exposure of the lesion is afforded. Doctor Myers included all sizes of prostatic enlargement in his series as well as benign and malignant glands. It has been our custom to employ the retropubic approach for clinically benign prostates estimated to weigh more than 50 grams which means approximately 15-20 per cent of the surgical cases of benign prostatism seen by us. The remaining 80-85 per cent are usually amenable to transurethral resection. As pointed out, the operation is equally suited for radical prostatectomy. During the past three years approximately 680 cases of prostatism have been dealt with surgically by our group in private practice with the usual approximate 20 per cent or 136 being malignant. Radical retropubic prostatectomy has been performed four times which means that approximately 3 per cent only are in a stage considered favorable for radical removal, the only treatment that offers a possible cure. These figures are cited in an effort to impress upon you the importance of early recognition of carcinoma of the prostate in order that more patients will reach the urologist before the disease has advanced too far.

In closing I want to again thank Doctor Myers for his contribution to prostatic surgery.

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External Injuries of the Eye*

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Histology

IN ORDER to review a little on the structures concerned in this paper I will touch lightly on the histology of the eye.

The globe is about one inch in diameter, has a comparatively avascular coat approximately one millimeter in diameter composed of sclera and cornea.

The cornea is normally clear and transparent and is composed of five layers. From without inward these layers are the stratified epithelium, Bowman's membrane and endothelium. The epithelium consists of five layers of clear cells resting on the smooth surface of Bowman's membrane. The substantia propria, which is about 9/10 of the thickness of the cornea, is made up of orderly arranged bundles of specialized connective tissue.

Descemet's membrane is thick, tough, elastic and highly resistant to many toxic substances. The innermost layer of endothelium consists of a single layer of flattened cells.

The sclera is white and is composed of fibrous and elastic connective tissue. It is firm and compact except in the region of the scleral foramen, where the sievelike lamina cribrosa extends across the opening, allowing passage of nerve fibers from the retina to the optic nerve.

The intermediate layer of the globe is composed of iris, ciliary body and choroid and is called the uvea.

The iris is made up of pigment-bearing cells, sphincter and dilator muscles, blood vessels and nerves in a spongy connective tissue. The posterior surface of the iris contains a double layer of pigmented epithelial cells. Its base is attached to the anterior surface of the ciliary body forming an angle through which the aqueous escapes from the anterior chamber. Constant patency of this filtration angle is necessary for the maintenance of normal intraocular pressure. A meshwork lines this angle through which the aqueous passes into Schlemm's canal and is carried away by the venous circulation.

The muscular portion of the ciliary body controls the thickness of the crystalline lens and the secretory portion is concerned with the formation of aqueous. The ciliary body, triangular in shape, is anchored to the scleral spur posterior to the filtration meshwork and Schlemm's canal.

The choroid acts as an organ of nourishment and is made up of blood vessels and pigment-bearing cells in a connective tissue framework.

The retina lines the inside of the globe extending forward to the ciliary body and ending in the ora serrata. It is a nevous structure composed of cells, synapsing nerve fibers and highly specialized end organs known as rods and cones.

The anterior fifth of the globe contains the aqueous humor and crystalline lens, the posterior four-fifths the vitreous humor. The lens is a transparent biconvex organ, suspended and controlled by zonules which extend to the processes of the ciliary body from the lens capsule. The vitreous gives body to the globe, is clear and jelly like, does not regenerate and in case of loss is replaced by clear liquid.

General

Trauma results in the enucleation of many eyes each year. Complications may follow immediately, such as hemorrhage, during convalescence such as acute inflammations and infections, or late, such as secondary glaucoma or shrinking and softening of the globe (phthisis bulbi).

The general practitioner is called on at times to treat ocular injuries. Because of their relative infrequency, he is often at a loss as to proper handling, and his feeling of inadequacy and hesitancy is heightened by the realization that improper care may cost the patient his eyesight. It is often inadvisable to delay treatment until the patient can be seen by a specialist, therefore, the physician first seeing the patient should at least initiate proper treatment. It is with the welfare of the patient in mind that I will try to present some of the more common emergency ocular conditions and their therapy.

Corneal Foreign Body

Corneal foreign body is probably the most common eye condition seen in general practice.

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Proper removal of a foreign body will eliminate many of the conditions the ophthalmologist is called on to treat. A foreign body should be removed only under good anesthesia, good illumination and good magnification. Adequate anesthesia can be obtained by instilling two or three drops of pontocaine, ½ per cent solution, in the conjunctival sac.

A small pencil flashlight as a good source of light and magnification is best obtained by using a binocular loupe (Beebe). A foreign body not embedded in the cornea may be brushed off with a small wet cotton applicator. An embedded foreign body should be lifted out. Lifting it out is important since this minimizes the amount of corneal epithelium destroyed or scraped off. If foreign body spuds are not at hand, a sterile hypodermic needle may be used. Remember that pain is less when the foreign body lies near the center of the cornea and also that even slight scarring in the center six millimeters of the cornea may cause considerable loss of visual acuity.

A foreign body seen in the first few hours is usually fairly easily lifted off. When seen in 12-24 hours it is often hard to remove due to oxidation (usually iron particles) with extension of a ring of ferrous oxide stain into Bowman's membrane and underlying stroma. This ring should be removed as it may delay healing or in time slough extending the size of the ulcer crater unnecessarily. Seen 24-48 hours after injury the foreign body may already have fallen away. The ring of rust is usually readily removed due to infection around it. The ulcer crater should be cleaned and cauterized with tincture iodine. Antiseptic ointments (not mercurials) should be used to fill in the ulcer crater and promote antisepsis.

In all three of these stages the patient is made comfortable with butyn and metaphen ointment. After infection occurs it is usually necessary to add an antiseptic drop or ointment to the treatment. The eye should be watched for ciliary injection, clouding of the cornea and constriction of the pupil denoting ulceration or uveitis. These cases require atropine or are better turned over to an oculist. Where possible it is well to avoid the use of anesthetic ointments since they tend to retard rapid and proper healing of corneal epithelium.

Corneal Abrasion

Corneal abrasions are also common. The patient complains of a foreign body sensation in the eye. These are often missed by the examiner unless the cornea is stained with 2 per cent aqueous flouresceine. A scratch of the cornea from a human fingernail is very painful. Most abrasions heal readily in a day or two. They are probably best treated with a firm pressure dressing. The use of ointments here is again debatable due to interference with epithelial regeneration. Argyrol should not be used where corneal epithelium is broken because of the danger of permanent staining.

Corneal Ulcers

Ulcers of the cornea may develop secondarily to any minor injury of the cornea, or may develop spontaneously. Infected lids (blepharitis and meibomitis) and chronic infection of the lacrimal sac can lead to an ulcer whenever the protective epithelium of the cornea is injured. An ulcer may heal rapidly leaving very little scar or may destroy much corneal tissue with much scarring or even perforation. Needless to say perforation is serious and results in acute inflammation or many late complications. Ulcers usually respond well to cauterization and antiseptic drops or ointments.

Contusions

Fortunately the protective bony orbital rim prevents most blunt, non-perforating contusive injuries from doing serious harm. For the ordinary "black eye" cold applications applied before edema is present (24-48 hours) and hot moist applications after edema is present together with rest, avoidance of lifting, straining, violent coughing, etc., is usually sufficient.

Contusions of the globe should not be regarded lightly. Hemorrhage into the anterior chamber (hyphemia), dislocation of the lens, rupture of the outer coat and retinal separation are complications of contusion which are serious and require specialized care. The force of a blow on the globe, like on any fluid filled ball, is transmitted equally in all directions. The outer coat is weakest at the limbus and usually ruptures there. The tearing of blood vessels results in mild or severe hemorrhage within the globe. The choroid and retina, ciliary body, zonules, lens capsule and the iris may be torn. Sometimes the macula is involved as evidenced by hemorrhage followed by edema and varying amounts of degeneration, (commotio retinae). As is often the case blindness may result after these complications despite the efforts on the part of the physician.

Anterior chamber hemorrhage prevents internal examination of the eye. This should always be done, however, after the hemorrhage has been absorbed. Most hemorrhages will subside under rest and hot compresses. After 48-72 hours of observation to determine the progress, such as secondary hemorrhage or rise in intraocular pressure, mydriatics may be used. If these do occur, miotics should be used supplemented by specialized surgery (paracentesis). A rise in pressure when anterior chamber hemorrhage is present leads to blood staining of the cornea.

Hemorrhage may be due to laceration of the iris which usually is pulled away from its attachment to the ciliary body. Small lacerations give small displacement of the pupil and little impairment of vision while with a large laceration the opposite is true and requires surgical correction.

Perforating Injuries

Perforating injuries may be small or large. All are serious. Small fragments, usually metal chips, travelling at high velocity may pass through the cornea, in which case they are fairly easily seen, or through the conjunctiva and sclera leaving a wound so small it is quite difficult to detect. Undiagnosed intraocular foreign bodies lead to serious embarrassment on the part of the physician and usually result in catastrophe to the eye. These small metallic foreign bodies are usually hot and sterile and may produce no symptoms for years. Usually, however, they give rise to recurrent iridocyclitis, cataract, siderosis bulbi or endophthalmitis. When the retained foreign body rusts away and the rust is disseminated throughout the eyeball, the globe becomes phthisical. The x-ray should always be employed as a diagnostic measure.

Chemical Burns

Burns of the cornea may result from fire, exposure to actinic rays or chemicals. They usually present urgent emergencies and are quite painful.

Fire and hot objects in contact with the cornea, as elsewhere on the body, may produce blisters or even destruction of tissue. Local anesthetics should be used to control the pain and all debris and dead tissue removed. A mydriatic should be instilled and the eye covered with a firm sterile dressing. It is well to cover both eyes. Pain is controlled by medication since the continued use of local anesthetics may result in a hopelessly denuded cornea and failure of the epithelium to regenerate. Castor oil and hydrosulphosol help healing.

Actinic burns result from the sun rays, as in snow blindness, or from ultraviolet rays as from a welding torch or sun tan lamps. The patient usually calls you around midnight complaining of severe eye pain and photophobia which may have even awakened him from sound sleep. The symptoms usually come on about 8-12 hours after exposure. Local anesthetics, ice compresses and eye pads usually give relief and there is no permanent damage. Often about fifteen minutes of looking at an infra-red heat lamp gives considerable relief.

Chemical Burns

Chemical burns in general are to be considered serious. Chemicals, either solid, liquid or vapor, cause an alteration in the structure of the cornea and conjunctiva.

The immediate treatment of a chemical burn is the most important and should be given at the site of the accident. The eye should be thoroughly flushed with water and all particles of chemical removed. The lids must be everted, despite the blepharospasm, and the retrotarsal folds thoroughly cleaned. A local anesthetic, such as ½ per cent solution of pontocaine, should be used and the washing continued. Fluoresceine should be used to stain the eye. If the corneal epithelium shows green the washing is continued for 15-20 minutes or until no staining is present. If after washing, the cornea continues to stain the case is considered to be an equivocal chemical burn and is referred to an ophthalmologist.

Time is of importance and no more than two hours should elapse from the injury to the time of specialized treatment. The prognosis grows worse as time passes and a delay of six hours usually results in some loss of vision.

Conjunctival adhesions may occur in severe cases. These can be prevented by passing a small, smooth, glass rod covered with vaseline between the lids and globe once or twice daily.

Neutralizing agents should not be used as it has been found that many of them are injurious in themselves.

Acids tend to coagulate the proteins of the surface cells and themselves becoming neutralized in the process. The action of acids is not progressive and the extent of the burn depends on the amount and concentration and time elapsed before it is washed out.

Alkali burns are more dangerous because their action is progressive and may involve the entire depth of the epithelium. If it progressed so far as to damage Bowman's membrane irreparable damage to the tissue results. The damaged cells should be removed by denuding.

Vapor burns are handled the same except that washing does not have to be done as long. A few chemicals cause a delayed injury several hours after contact. Each case should be observed for late untoward symptoms.

Loss of vision is due to opacification of the cornea and adhesions of the conjunctiva, following a symptom-free period of several hours after the accidental contact. The clouding is due to a change in the corneal structure. All alkaline and a few neutral organic compounds produce this; acidic compounds and those neutral chemicals which experience shows to be relatively harmless do not.

Injuries to Lids and Orbit

Injuries to the lids and orbit are numerous. We are concerned mainly with lacerations of the lids, perforating wounds of the lids and or the orbit, and fractures of the orbit. It is not always easy to determine the extent of these injuries due to ecchymosis and swelling. Sufficient retraction of the lids should be done to determine accurately any injury to the globe itself. In lacerations of the lids one should ascertain if the lid margins, the canaliculi, tear sacs of canthal ligaments have been involved. Injury to the levator or recti muscles results in abnormal movements of the lids and eyeball.

Emergency first aid treatment for wounds about the orbit is cleansing, hemostasis, antiseptics and a protective dressing.

Where possible immediate and accurate repair of lacerations of the margin of the lids should be done. Repair before edema occurs gives much better approximation and cosmetic result. However, the eye lids may be of relatively minor importance compared with the shock and other more serious injuries which the patient may have. In this case it is better not to make a hasty and inadequate repair but cover the eye and wait until later. Ice compresses kept on the lids help keep down swelling.

Plastic repair of the lids is too large a field to do more than touch on in the time of this paper. All structures, skin, conjunctiva, muscles, ligaments and lacrimal apparatus should be dealt with individually and returned to as close to their normal relationships and function as possible. For buried sutures about Five-O gut on an atraumatic needle should be used. For the skin and conjunctiva Six-O black silk on atraumatic needle is used.

Fractures of the Orbit

Fractures about the orbit is again too vast a subject to more than touch on in this paper.

Fractures with little or no deformity require no special treatment.

For fractures of the rim reduction by manipulation and a supportive dressing is usually adequate.

Severe fractures of the roof of the orbit are serious since they usually involve neurosurgical complications.

In inner wall fractures little can be done in reducing deformity except by elevation and splinting through the nasal cavity and avoidance of infection from the adjacent sinuses.

Reduction of fractures of the outer wall may be done by applying pressure from within the outer conjunctival cul-de-sac or through an incision along the outer border of the orbit.

Fractures of the floors are quite common and often neglected. Reduction is done by elevation through the antrum.

The most annoying symptom of fractures of the orbit with displaced orbital contents is diplopia.

At times a contusion of the orbit may produce a muscle palsy. This may be due to muscular or peripheral nerve injury, or to cerebral concussion and hemorrhage. The former are treated by administration of tissue alteratives, such as K. I., and nerve stimulants. The latter require general treatment.

Summary

Eye injuries are usually first seen by and should be treated by the general physician in most cases.

Adequate anesthesia, light and magnification are essential in examining and treating injuries of the eyes.

Embedded corneal foreign bodies should be removed with a minimum of damage to the corneal epithelium.

When there is a suspected intraocular foreign body (metallic) the x-ray should be employed.

Immediate and copious washing of the eyes is imperative in chemical burns.

Lid lacerations should be carefully repaired, the earlier the better, for cosmetic and functional results.

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Hematogenous Osteomyelitis Due to Escherichia Coli

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Many organisms have been reported as the etiological basis of hematogenous osteomyelitis. Escherichia coli, though a constant inhabitant of the gastro-intestinal tract and occasionally of the genito-urinary tract, is rarely reported as a cause of hematogenous metastatic osteomyelitis.[1, 2, 3, 4, 5, 6] Cooperman and Gottlieb[7] reported eight cases from the literature in 1936. Seven of these were secondary to convalescent typhoid fever. Richardson and Ranking[8] in 1940 report a metastatic E. coli infection refractory to sulfathiazole and sulfapyridine therapy. Butler[9] found only one case of E. coli among five hundred cases seen from 1919-1937. The case below is of additional interest because of the concomitant sickle cell anemia.

M. E. E. Hospital Number 50318; X-ray Number 17609. Colored female, age 24.

Patient was admitted to the obstetrics service of the Jefferson-Hillman Hospital on August 8, 1947, with a chief complaint of fever and pain in the left lower extremities and abdomen. She was eight months pregnant, para II and gravida III. She was in a state of normal health until about 2:00 p.m. on August 5, 1947, when she developed epigastric pain, pain along both lower extremities, and fever. Throughout her early childhood and youth she had had similar episodes following which she had been informed of yellow sclerae, brownish urine, and extreme weakness. There was no abnormal bleeding at any time. In 1946 she had received a rapid (one week) treatment for syphilis with penicillin.

Physical examination disclosed an eight months' pregnant colored female, well nourished and in no distress. B. P. 120/60, pulse 84. There was no bleeding from the gums on pressure. The pharynx was slightly injected. The cervical, axillary, inguinal and epitrochlear lymph nodes were firm and shotty in character. The chest was clear to percussion and auscultation. The heart did not appear to be enlarged on percussion, but a loud, blowing systolic murmur was heard all over the axilla, best at the apex. The abdomen was protuberant. The spleen and liver were not palpable. There were no petechial or ecchymotic areas over the rest of the body. Laboratory data indicated sickle cell anemia. At this time she received 1000 cc. of whole blood. Fetal heart tones were not heard prior to delivery of a stillborn infant on August 16, 1947. Following delivery, the temperature rose to 103.4° and she was presumed to be in sickle cell crisis. About August 30 effusions of both knees became evident and these were aspirated by the orthopedic consultant. Thirteen days after this a single blood culture of E. coli was reported. Repeated growths of E. coli were reported after aspirations of the knees. After the first positive culture report of knee aspiration, streptomycin, three grams daily, was given systemically, beginning September 12. On local aspiration of both knees, 0.5 gm. of streptomycin was injected into each knee joint on September 16 and 19. In the meantime, an osteomyelitic abscess had developed over the left tibial crest which was aspirated and replaced with 0.25 gram of streptomycin on September 19. The swelling of the knee and midtibial region gradually subsided, and the patient's temperature dropped by lysis. Streptomycin was reduced to one gram daily on September 30 and was discontinued on October 6 because of developing vestibular symptoms. A total of 50 5/8 grams was administered. Prior to the diagnosis of E. coli osteomyelitis, 4,370,000 units of penicillin were administered for the chest condition, which was mistakenly thought to be lobar pneumonia. She had likewise received sulfadiazine for the same illness. On October 23 the patient had been afebrile for one week. There was still some synovitis of the knee. Immobilization in casts initially had been followed by splints. A hypochromic anemia continued throughout her hospitalization. She was discharged from the hospital on October 29, 1947. In the hospital x-rays of the affected knees showed soft tissue swellings and demineralization of the adjacent tibial and femoral condyles, a picture consistent with septic arthritis. There was a destructive lesion of the left mid-tibial shaft which coincided with the abscess aspirated. This picture subsequently resolved with no evidence of the original process.

The patient was seen in the outpatient clinic on November 14, 1947, at which time casts were applied. These were removed on December 1, 1947. as the patient was asymptomatic and afebrile. She was next seen in the Emergency Room on the morning of March 24. 1948, complaining of upper abdominal pain associated with vomiting of 24 hours duration. Some time after coming in the Emergency Room, she became irrational, restless, gasped once or twice, and died. Complete autopsy failed to demonstrate any explanation for the sudden death. Pathological findings of importance consisted of a complete picture of sickle cell anemia, with marked sickling of red cells in vessels of the abdominal organs and bone marrow, marked siderofibrosis of the spleen, and siderosis of the liver. There was, in addition, chronic pyelonephritis, marked, with moderate bilateral hydronephritis.

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Summary

A case of hematogenous osteomyelitis due to Escherichia coli is presented. The case is of additional interest because of the presence of sickle cell anemia. Favorable response to streptomycin is noted.

TABLE I

BACTERIAL CULTURES

	Date	Type	Result
1.	8-5-47	Blood	13 days incubation. E. coli
2.	9-6-47	Synovial fluid, left knee	E. coli positive
3.	9-11-47	Blood	No growth in 72 hours. Streptomycin started 9-12-47
4.	9-15-47	Blood	No growth in 48 hours
5.	9-17-47	Blood	No growth in 48 hours.
6.	9-17-47	Blood	17 days incubation; no growth
7.	9-23-47	Blood	No growth in 72 hours
8.	9-24-47	Synovial fluid, right knee	E. coli positive
9.	9-25-47	Blood	22 days incubation; no growth
10.	9-29-47	Blood	After 19 days no growth
11.	10-6-47	Blood	15 days incubation Diphteroids contaminate
12.	10-14-47	Blood	After 14 days no growth
13.	10-25-47	Blood	After 3 days no growth

TABLE II

ADDITIONAL LABORATORY DATA

	Date	Test
1.	8-5-47	Urine urobilinogen 4 plus; S.G. 1.1012
2.	8-5-47	Kahn doubtful
3.	8-6-47	Icteric index 32
4.	8-6-47	100% sickling of blood
5.	8-13-47	100% sickling of blood
6.	8-13-47	Blood type O, Rh positive
7.	8-20-47	Urine negative for urobilinogen in all dilutions
8.	8-21-47	Kahn blood two kahn units
9.	8-26-47	Urine negative
10.	8-26-47	Blood agglutinations negative for Para A, Para B, Proteus OX19, Brucella abortus, and one plus for Typhoid O in 1/20
11.	8-29-47	Agglutinations negative
12.	9-4-47	Urine slight trace albumin
13.	9-5-47	No parasites or ova seen in stool
14.	9-11-47	Icteric index 4
15.	9-11-47	Van den Bergh direct-negative; corrected sedimentation rate-17
16.	9-13-47	Urine negative for Bence-Jones protein
17.	9-15-47	Spine fluids no cells; Wassermann negative; total protein 14 mg. %; gold curve 33333332100
18.	9-16-47	Sedimentation rate 21 mm. hour
19.	9-17-47	Heavy trace of albumin in urine
20.	9-18-47	Urine culture. No growth in 3-4 days
21.	9-23-47	Icteric index 4; Van den Bergh direct-negative
22.	9-25-47	Stool: no parasites seen

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Report of the Council

The Mississippi State Medical Association

Called Meeting, August 16, 1950

At the request of the president, the chairman of the Council of the Mississippi State Medical Association called a special meeting of the Council at 1 p.m., August 16, at Jackson, for the purpose of considering a request made by the American Medical Association for recommendations for a chairman for procurement and assignment of medical officers for the Armed Forces during the present emergency, and to recommend policies. The Council elected its entire membership to act as the advisory committee to the chairman.

RECOMMENDATIONS

The Council recommends that the state furnish its quota of medical and other needed professional, technical, scientific and specialist personnel based on the population density in each category in relation to other states. It recommends that no undue pressure be placed on such groups in order to provide more than the quota required in relation to the population density of the category.

The Council recommends that all individuals of the medical profession and other needed professional, scientific, technical, and specialist categories, who have not reached the age of 45 and who do not now hold commissions regular or reserve in the Army, Air Corps, Navy, Marine Corps, Coast Guard, National Guard or the United States Public Health Service, or who are not now enlisted members of any of these services be required to register in accordance with the Selective Service Act for the procurement and assignment of personnel for the Armed Forces.

The Council is of the opinion that no individual of the above medical or other needed professional tech-

(Continued on Page 149)

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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Address all material for publication to W. H. Anderson, M.D., Booneville, Mississippi.

Editorials

TULANE HONORS CHIEF

Tulane recently did honor to its oldest and most distinguished living alumnus at its recent commencement. He was in the class of 1870. He is dean of the surgical world in deeds performed and in wisdom possessed. He has not only done honor to the great medical school of Tulane, but to our nation. No more versatile man has blessed the medical profession. Although he is not now in active practice, he is keeping abreast of the progress in medicine and looking ahead. He is a member of our Mississippi Fifty-Year Club. In accepting his new diploma, especially designed for the seventieth anniversary of his graduation, he said in part: "I love my profession and that despite its cruel hours and glorious triumphs, medicine has given me the greatest satisfactions of my life and now as I stand before you and approach the seventy-third year of my consecration to its humanitarian mission, my profession remains the dominant factor and pivotal point in my existence. So happy indeed that I would not exchange my vocation for any other, even though I had the privilege of another choice."

Longer live the "Chief," the beloved Rudolph Matas.

FOUR-YEAR SCHOOL FOR WEST VIRGINIA

West Virginia has had differences of opinion about its two-year medical school, as Mississippi had for a long time. It seems now that she is coming to the conclusion, as our state did, that the four-year school is compulsory. The **West Virginia Medical Journal**, edited by the scholarly Dr. Walter Vest, seems to be doing a fine job securing the data for and against a four-year school. From reading the journal it would seem that the facts favor the four-year school by all odds, as in our state.

Medical schools must be different now and are of more importance than ever before. The farm college now carries the latest in agricultural science right out to the tractor row, and so the medical school now must be the motor power to carry the latest and the best known in medicine out to the people. Postgraduate work shall be in the plan and an extension consultation service shall serve mightily in the social and economical life of our people. Personally, we should be pleased to see the fine state of West Virginia have a four-year medical school to take care of her own young men and in turn serve her people.

Evidently Mississippi has more population than the census has recorded this time, according to Dr. Whitfield of our State Board of Health. We are inclined to accept what Dr. Whitfield opines, in deference to his usual care and accuracy. Births for the last ten years run more than the deaths and our birth rate per thousand is greater than a number of other Southern states. If our population is what the census says, then we lost 40,000 a year to other states for the last ten years. We are losing a member in Congress on this count. After frost we had better take another round of counting and find the rest of our folks. If these figures be true we need to double our efforts to keep our folks at home. Balancing agriculture with industry will help, while a four-year medical school and continued good medical service do their part.

The span of human life was twenty years at the birth of Christ, 40 at the beginning of the War Between the States and now it is 68 years. Social workers are becoming much concerned over the aged as a relief problem. Dr. Andy Hall, the doctor of the year, we understand, has suggested to Oscar Ewing that if he wants to cut down the number of the aged that his socialized medical plan can do the job all right, like it has in Russia where the average span of life is 48 years under this regimentation. Dr. Hall is a great student of human affairs and he knows medical history and is able to make valuable observations from his own experience. He is the embodiment of free medicine which thinks broader, deeper and farther than the controlled type our government is demanding.

The Delta reports that with all their cotton spraying, they do not have to screen their houses against insects, nor are the stock bothered much with the flies. It will be interesting to note if the number of cases of infantile paralysis decreases in this section where there has been such a good job of spraying done.

On September 12 the Northeast Mississippi Medical Society meets at Amory, the home of the beloved Dr. Bryan who was for many years active in this society. Outstanding in general practice he has rendered much service in constructive medical thought. Amory is also the home of our able president this year, Dr. M. Q. Ewing. In honor of these two men and in keeping with our duty let us make this meeting a record breaker. A good scientific program has been arranged and the entertainment is always superb in Amory.

On October 3 the Central Medical Society is to have the Arkansas School of Medicine to put on its program. We congratulate Central on this plan. Last year it had the Alabama Medical School to give the program. The Arkansas school will do an excellent job. Fraternal spirit between the states will be activated, and information for our four-year medical school may be gained. Arkansas, Mississippi and Alabama may soon take the lead for the most practical medical schools for the practitioner.

The Delta Society holds its next session at Belzoni on October 11. It always puts on a good program.

AP JOURNAL

The American Academy of General Practice

We have medical journals galore and so many medical organizations that no mere doctor has time to cover the list. There is one, however, The American Academy of General Practice, which is stepping off with a journal that is rendering a fine service to the rank and file of doctors in this country. Dr. Walter C. Alvarez, the very able editor, is assisted by an outstanding staff. This organization has a fine future and promise to render a great service. It has set up standards that require its members to take some work each year, to attend medical meetings, or take postgraduate work.

Medical science is wide awake and growing and the editor of this new journal is asking for practical papers for practitioners. Many think we still need general practitioners of medicine and surgery. We know that specialists are imperative, but if we are to continue to have men in general practice there must be a new day for them. A definite correlation between general practice and the specialties, with mutual benefit to each, may warrant also better service to the people. As it now stands most of the medical papers are read by specialists **for** specialists. Some of the best and most helpful information in the field of medicine has not been published, yet is possessed by men who have learned it by practice and by observation. It might not be amiss for the general practitioner to write his papers right out of his experience without reviewing the literature. The man who observes learns. The field of medicine demands a wider grasp and challenge to build total health assets—mental, physical, and spiritual—toward a citizenship adequate to meet the emergencies of life. It is time to broaden the basis of the medical profession. Every spoke in the wheel is of great importance, but upon the general practitioner depends its ultimate fate, as the military upon the foot soldier. Better medicine to all the people at less cost and without regimentation should be the aim. The general practitioner must be accorded a place in our medical economy now and be respected, else he passes into the pages of history. He should be the cornerstone of the profession, but he can not be unless he renders the service to the people that is expected of him. The challenge is to him to apply himself and put forth his supreme effort.

News and Comment

VAN METER PRIZE AWARD

The American Goiter Association again offers the Van Meter Prize Award of three hundred dollars and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The award will be made at the annual meeting of the Association which will be held in Columbus, Ohio, May 24, 25 and 26, 1951.

The competing essays may cover either clinical or research investigations; should not exceed three thousand words in length; must be presented in English; and a typewritten double spaced copy in duplicate sent to the corresponding secretary, Dr. George C. Shivers, 100 East Saint Vrain Street, Colorado Springs, Colorado, not later than March 1, 1951.

ANNOUNCEMENTS

F. Adelbert Hoshall, M.D., announces the association of S. Edward Izard, Jr., M.D., practice limited to orthopaedic surgery, 95 Rutledge Avenue, Charleston 16, S. C.

William T. Howard, M.D., announces the association of B. G. Mitchell, M.D., in the practice of orthopedic surgery, 1101 Madison Avenue, Memphis, Tennessee.

David George Vesely, M.D., announces the opening of his office in the Bright Building, Greenwood, Miss., orthopaedic surgery.

W. Likely Simpson, M.D., announces the association of Edwin W. Cocke, Jr., M.D., in the practice of otolaryngology and surgery of the head and neck. Offices 899 Madison Avenue, Baptist Hospital Annex, Memphis, Tennessee.

Dr. F. G. Riley announces the association of his oldest son, Dr. W. G. Riley, for the practice of pediatrics, Riley's Hospital and Clinic, Meridian, Mississippi. Dr. W. G. Riley, after receiving his medical degree, spent one year in pediatrics at Harriette Lane Children's Department, Johns Hopkins, two years as flight surgeon with the Air Corps in the European Theatre, following with a year's residency in the Children's Hospital of the University of Pennsylvania, and a year at Vanderbilt University. He is qualified to take his specialty examination for the American Board of Pediatrics.

DEATHS

DR. J. H. STONE

Funeral services were held in Tremont August 2 for Dr. J. H. Stone, prominent county doctor of eastern Itawamba County since 1897.

Dr. Stone, who was one of the oldest physicians in active practice in Mississippi, died at a hospital in Tupelo at the age of 75.

In March, 1948, Dr. Stone was awarded the county-wide title of "good citizen of 1947," in an annual contest sponsored by the Itawamba County Times.

Dr. Stone was a member of the Mississippi Board of Health, the Northeast Mississippi Medical Society and the American Medical Association. He was a Vanderbilt graduate.

He was a life-long proponent of better schools for his community and state. His work on behalf of schools throughout the state won attention during his service in the State Legislature from 1928 to 1932, during which he served on the legislative education committee, health committee and finance committee.

DR. W. S. LAMPTON

W. S. Lampton, age 75 years, died at the hospital in Magnolia following an extended illness. Funeral services were held August 14 from the Magnolia Methodist Church with the pastor, Rev. E. A. Kelly, in charge.

Dr. Lampton practiced medicine for 47 years, nearly all that time in Magnolia. The large crowd that gathered at the church for the last rites and the many beautiful floral offerings bespoke the love and esteem in which he was held.

He is survived by one son, Sherwood Lampton of Magnolia; one daughter, Mrs. Champ Yarborough of Kentwood, La.; two grandchildren, Sherry and Jack Yarborough of Kentwood, La.; three brothers, D. E. Lampton and Sam Lampton both of Tylertown and Burke Lampton of Darbun; Mrs. L. W. Hinson of Lumberton and Mrs. Walter Fortenberry of Lumberton.

DR. W. A. BERRYHILL

Funeral services for Dr. W. A. Berryhill of Eupora, who died July 22 at his home were held in Eupora.

Dr. Berryhill had recently celebrated his 91st birthday and for the past 60 years had been an active practitioner in his city. He was a Tulane graduate.

Sixty years ago he was married to Miss Julia Pierce of Birmingham, Ala., who, with one son, Ira West Berryhill, El Paso, Texas, and two grandchildren survive.

He is survived by a sister, Mrs. Mattie Smith, Eupora, and several nephews and nieces including Noel Mize, Jackson.

Dr. Berryhill was formerly superintendent of the Methodist Sunday School, and steward in the First Methodist Church, and a charter member of the Eupora Masonic Lodge.

Dry Berryhill stated recently that he rode the first passenger train that entered Eupora and also the last passenger train out some years ago.

When he observed his 90th birthday several months ago, callers and gifts came from 16 states and many cities.

DR. H. S. FORD

Funeral services were held August 18 in Ripley for Dr. H. Stephen Ford, 66, who died in the Tippah County Hospital. He was born in Union County, attended the public schools, and graduated from the University of Tennessee Medical School in 1907.

He located in Brownsfield about 40 years ago, where he practiced over a wide territory in Mississippi and Tennessee, and operated a Clinic until his health failed a few months ago.

He was a Mason, a Shriner, member of the Mid-South Medical Association, and belonged to the Methodist Church.

His clinic was in Tippah County, Miss., and his home in Hardeman County, Tenn., and he was one of the best known citizens of both counties.

He leaves his wife, Mrs. Sadie Richardson Ford; four daughters, Mrs. Johnnie Carothers and Miss Doris Ford of Brownfield, Mrs. Olive Deming and Mrs. Hazel Yancey of Memphis; two sons, Hugh S. Ford of Germantown, Tenn., and James Ford of Brownfield; two brothers, John P. Ford of Cotton Plant, and Jim H. Ford of Brownfield.

DR. M. E. BRIDGES

Services for Dr. Moscow Edward Bridges of Enterprise community in Union County were held August 8 at the home of his sister, Mrs. H. C. Collins at Enterprise.

He died at his home at Enterprise Sunday night after a long illness. He was a Mason, Woodman of the World and a Methodist, and served in the Army Medical Corps during World War I.

After attending Chamberlain Hunt Academy at Port Gibson, Miss., Dr. Bridges was graduated from the University of Tennessee College of Medicine at Memphis in 1903 with highest honors. He was president of his class and a member of Phi Chi honorary medical fraternity. After his graduation he practiced for 12 years at Bobo, Miss., a year at Osceola, Ark., and after his discharge from the Army, at Marks, Miss., and New Albany until ill health forced his retirement.

DR. N. H. HOSEY

Dr. N. R. Hosey, 74, a native of Jasper County, died July 24 in a Memphis hospital, following a two weeks' illness. Dr. Hosey resided for many years in Marvell, Ark., engaged in the practice of medicine. He owned property there and in Jasper County. He practiced medicine in Laurel before going to Marvell.

Funeral services were held from the residence of his sister, Mrs. Mary Tyner of Laurel. Burial was made in the cemetery at Vernon, Jasper County.

Surviving are his wife, seven daughters, Mrs. Helen Reddoch, Mrs. L. P. Dowden, Mrs. Shirley Banks, all of Joiner, Arkansas; Mrs. Ora Sowell, Memphis; Mrs. Henry Roundorst, of Minnesota; Mrs. Irene Bowden, Miss Nina Hosey, all of Marvell; three sons, William A., Joiner; E. J., and N. R., both of Marvell; four sisters, Mrs. Mary Tyner, Laurel; Mrs. A. M. Harvey, Mrs. Charlie McKenzie, Memphis; and Mrs. H. G. McDonald, Shreveport, Louisiana; one aunt, Miss Arlone Risher, Maxwell; and eight grandchildren.

DR. J. U. ABERNETHY

Dr. John U. Abernethy, 94, prominent resident of Troy and one of Mississippi's oldest retired physicians, died July 27 at Troy.

He was born March 9, 1856, in Troy and after his retirement several years ago returned to live at the family homestead.

Dr. Abernethy, following his education at Tulane University and the University of Texas, first began the practice of medicine at Troy. He later moved to Quitman County, where, for many years, he served as county health officer and also held the office of county superintendent of education. He taught school for a long time in both Mississippi and Texas.

Burial services were conducted Friday morning at the Ware cemetery near Troy.

Dr. Abernethy leaves one daughter, Mrs. Berdie Jameson of Marks; three sisters, Miss Willie Abernethy, Mrs. Era Faulkner, both of Jonestown, and Mrs. Lula Barr of Oklahoma City.

FOR SALE

Complete room and ward equipment for fifty-bed hospital. All steel Simmons beds, bedside tables, chifferobes, bureaus and chairs. Also nearly new mattresses, felt and innerspring. Write or phone Jere L. Crook, M.D., Pres. Crook Sanatorium, Jackson, Tennessee.

REPORT OF THE COUNCIL

(Continued from Page 145)

nical, or specialist groups is essential and subject to deferment from service in the Armed Forces solely by virtue of his civilian occupation.

The Council recommends that individuals of the medical, or other needed professional, scientific, technical, or specialist groups, be declared available and be offered commissions or grades in the respective Armed Forces for which they may qualify, and be called into service in the following order:

First, those who have received all or part of their training as students under the ASTP or Navy V-12 Program and have served no time in the Armed Forces.

Second, those who have received all or part of their training at their own expense and served no time in the Armed Forces.

Third, those who have received all or part of their training as students under the ASTP or Navy V-12 Program and have served less than two years in the Armed Forces.

Fourth, those who have received all or part of their training as students under the ASTP, Navy V-12, or Veterans Administration Training Program, and who may or may not now hold commissions and have served two years or more in the Armed Forces, and those who received their training at thir own expense and have served two years or more on active duty who may or may not now hold commissions.

The Council further recommends that the third and fourth categories listed above be called into active service with the Armed Forces in accordance with a point system. Those with the smallest number of points being called first and so on in ascending order, points to be computed as follows:

(1) For a wife as a dependent—5 points.

(2) Each dependent child—5 points.

(3) For each month of service in the Armed Forces in the continental limits of the United States or its territories and the Dominion of Canada, or on duty in the Army of Occupation—1 point.

(4) For each month of foreign service in time of war other than in the Dominion of Canada—2 points.

The Council recommends that those physicians or other needed professional, technical, scientific and specialists categories who are under the age of 45, and who are naturalized citizens of the United States be required to register with the Selective Service and be offered commissions or grades for which they may qualify in the Armed Services on the same basis as native born citizens, giving credit for points as established by official records to those who served in the Armed Forces of their native land if such be a friendly power during World War II.

It is recommended that in computing points for deferment time served as a hospital interne or student shall be excluded.

The Council recommends that those individuals who are licensed by the states as members of medical or other needed professional, technical, or specialists groups, whose educational qualifications do not qualify them for commissions in the Armed Services, and whose ages are under 45, be declared available for service in the Armed Forces and be offered grades in the medical or other services for which they may qualify on the basis of education, training and experience.

The Council recommends that the Medical Officer assigned to duty as Medical Officer for Selective Service be selected from a group of officers whose age or physical condition, whichever applies, precludes his assignment to general military duty in the grade to which he is appointed.

The Council recommends that there be established immediately a training program in cooperation with the established approved medical schools and hospitals which maintain approved training schools for nurses and medical technicians, for the purpose of increasing the number of medical, nurse, and medical technician graduates for the Armed Forces.

It is recommended that individuals approved for training under the above program be physically fit for general military duty at the time of selection. It is recommended that these trainees be selected as follows:

First, applicants for entrance to Medical School be selected from individuals whose educational qualifications and aptitude tests meet the requirements for admission to an approved Medical School, and who have previous to June 1, 1950, filed application for admission to a first-year class in an approved Medical School. It is further recommended that veterans and individuals now on active duty in the Armed Forces be given preference for such training if their educational qualifications and aptitude tests equal those who are not veterans. It is recommended that persons taking training through the above plan be paid as Private 1st Class in the Army and of equal grade for the other services with tuition, books, uniforms and required equipment furnished by the Government with the allowance for food and lodging ordinarily provided for such grade on detached service. It is further recommended that Medical Officer trainees be required on completion of one year internship following graduation, to accept commissions in one of the Armed Services for a period of five years unless otherwise terminated for the convenience of the Government. It is recommended that such Medical Officers be required to serve on active duty in the capacity of Commissioned Officers for a period of two years exclusive of one year spent as an intern.

Second, other applicants after the above category is exhausted.

It is recommended that nurse trainees be selected from those individuals whose educational qualifications and aptitude tests qualify them for admission to an approved nursing school for training registered nurses. It is recommended that a suitable grade be determined for these individuals and that they receive such pay and allowances as are ordinarily provided for this grade. It is recommended that such nurse trainees on graduation be required to serve in the commission or grade for which they may qualify for a period of two years.

It is recommended that medical technician trainees be selected from those applicants whose educational qualifications qualify them for admission to an approved school for training medical technologists as determined by the American Medical Association and the American Hospital Association. It is recommended that a suitable grade be determined for these trainees and that they be granted pay and allowances customarily provided for the grade. It is recommended that Medical Technician graduates be required to serve on active duty in the hospitals of the Armed Services or the Veterans Administration for a period of two years following graduation. It is recommended that where Medical Schools and hospitals do not now have sufficient teaching personnel and facilities to carry on such a training program the respective services detail such necessary personnel whose education and experience meet the requirements for teachers in the capacity required, and who are acceptable to the management of the respective institution, such personnel to be paid such pay and allowances by the Federal Government as are customarily provided for members of the Armed Forces for the grade assigned.

The Council recommends the establishment of an emergency maternal and infant care program to continue for one year following the close of hostilities. The Council recommends that such emergency maternal and infant care service be available to the wives and dependent infants two years of age and under, of the enlisted personnel of the respective branches of the Armed Services through the grade of Sergeant in the Army and equal grades in the other branches. The Council recommends that the physician rendering antepartum or prenatal care be reimbursed for his services on a per office visit basis if the patient elects to call another physician at the time of delivery, or if the first physician is not available on account of professional services to another patient, or is absent from the locality for whatever reason, or if it is necessary to refer the patient to a hospital removed from the locality in which the patient customarily resides. The Council recommends that a predetermined delivery fee be paid to the physician who delivers the infant and that the hospital in which the infant is delivered be paid a predetermined fee for hospital care. The Council further recommends that if a physician other than the physician who delivers the infant renders required medical care and attention for an infant qualifying under this program at any time during the first two years of life that he be reimbursed therefor. The Council further recommends that the service to the infant during its first year of life shall include inoculations to provide immunization of the infant against smallpox, diphtheria, tetanus and whooping cough, and that biologics for this purpose be furnished by the Maternal and Child Health Divisions of the States from funds allotted by the Federal Children's Bureau.

The Council further recommends that no representative of the medical profession of this state whose actions are to reflect the policies of the Medical Association on a national basis be chosen without prior consultation with the Council and its approval obtained.

The Council recommends that all construction requiring the expenditure of Federal funds except that construction which will provide additional medical and nursing personnel for the nation be deferred for the duration of the emergency unless the construction is now in progress or contributes directly to the prosecution of the war effort.

It is the intention of the Council that these recommendations shall not in any way conflict with any national or state law.

Respectfully submitted,
E. C. Parker, M.D.
Chairman, by H. C. R.
H. C. Ricks, M.D.
Secretary

Interpreting Medical Literature

PEDIATRICS

Fatal Boric Acid Poisoning in a Newborn Infant—Abramson, Harold—Pediatrics, 4:719 (December) 1949.

"Boric acid is not a mild and harmless drug. It is quickly absorbed into the body and, in proper amounts, may readily cause toxicity and death. In addition, boric acid exhibits a selective affinity for certain organs, such as the brain and spinal cord. When consideration is given to the extensive use of boric acid in various forms, it is surprising that more instances of poisoning have not been reported. It is possible that many cases have occurred unsuspected. Furthermore, the number of deaths from boric acid poisoning is fortunately low. These deaths may represent examples of hypersensitivity to the chemical. Nevertheless, the fatalities are needless. The doubtful benefits that are derived therapeutically from boric acid hardly justify its continued use, particularly when many more effective drugs are available.

The following report of the death of a newborn infant from boric acid is an example. S. S., female, white, was born normally, full term, weight 3,825 Gm. Feedings of diluted evaporated milk were given. The early postnatal course was uneventful except for the occurrence of several loose green stools on the day of discharge to home. Twenty-four hours later, she regurgitated. The stools were loose and frequent; no blood was seen. The buttocks became reddened and excoriated. The mother applied daily to the gluteal areas unknown amounts of boric acid ointment, U.S.P. 10 per cent, and dusted liberal quantities of boric acid powder daily onto the baby's diapers.

The symptoms became aggravated and on the eighth day of life the infant was brought back to the hospital, acutely ill and dehydrated. Signs of an early bronchopneumonia were present. Death took place 12 hours later.

Bacteriology: Postmortem cultures from the gut and the spleen were negative for pathogenic bacteria.

The history of the use of boric acid in ointment form and as a dusting powder, the excoriated buttocks, the diarrhea and dehydration, the presence of bullous skin lesions, and the hemorrhagic phenomena seen in the kidneys and intestines suggested the possibility of boric acid poisoning. Fresh specimens of the gut and liver, and pieces of the brain, liver, and kidneys preserved in formaldehyde were sent for chemical analysis. Boric acid was found in the amount of 26 mg. in 60 Gm. of composite sample, or 0.052 per cent. This quantity represents a lethal concentration of boric acid."

COMMENT: I think it is very well that we should call attention to the many accidental things that may happen to children, and this is just one of them. If carelessly placed about where a child can get hold of a bottle of boric acid solution, he will frequently drink it. Not only that, but the use of it as indicated in this article is all of the utmost importance to be brought to the attention of the medical profession as a whole.

Sharp and Dohme, Incorporated, today announced the release of 'Topaminic,' a new antihistaminic, analgesic cream for prompt relief from acute itching due to atopic and contact dermatitis and a variety of other allergic skin disorders.

A soothing, protective preparation, 'Topaminic' suppresses the effects of histamine-like substances that may be released in the skin during all allergic reaction and arrests the uncontrollable desire to scratch, thus minimizing the secondary infections that sometimes occur in irritated, excoriated skin.

THE CHILD WHO STUTTERS

by
ELIZABETH GAINES JACKSON
Reading and Speech Clinician
Child Guidance Clinic

Stuttering is one of the commonest types of speech difficulty. It is generally estimated that about one half of all adult speech cases are stutterers. In adults, stuttering can be a real handicap, both socially and in business. Furthermore, at this age it is a relatively difficult problem to treat. Therefore, authorities all agree that in stuttering, an ounce of prevention is worth far more than a pound of cure.

Types of Stuttering

There are two kinds of stuttering, which are really two different stages in the disorder. The first is usually called stammering, and it is marked by a simple repetition of sounds or whole words. Almost all children do this to some extent at some time. At this stage there is little stress shown by the stutterer except excitement. Right here it is very important that the problem be handled wisely, and if it is there is an excellent chance that it will disappear after a time.

The second stage is the true stutter or "block", and that is exactly what happens. The stutterer is literally blocked in his effort to speak, and he cannot get the beginning of a word out. He often shows marked effort and his face may contort, turn read, or in other ways show that he is suffering. He is experiencing a temporary spasm or cramp of the speech muscles. These signs show that the difficulty is becoming severe; furthermore, they probably indicate that the original stress which brought out the stammer has now transferred into the fear of speech itself. In other words, the sufferer is now frightened of his ability to speak.

In either stage of stuttering the treatment is approximately the same, but with the secondary or "block" stage, more time and help must be given.

What Is Stuttering?

In trying to overcome any handicap, it is very important to understand exactly what the difficulty is, so as not to treat it in the wrong way and make it worse. The consensus of opinion among authorities now seems to be that stuttering is not actually a speech defect. If this seems surprising, a little thought will show that it is true. For instance, it will usually be noticed that the child speaks very well in certain situations or with certain people. Also, there are probably times when he does not stutter at all. On these occasions the child has no difficulty with speech—his voice is clear, and his enunciation is satisfactory. What the child has, then, is a difficulty in expressing himself, particularly in relation to certain people or in certain situations. Therefore, stuttering cannot be looked upon as a defect of the speech mechanism, but must be regarded as the symptom of some deeper stress. When this fact is clearly understood, effective help can be given the stutterer.

What Does This Symptom Represent?

Most stuttering seems to be the registering of nervous tension, of which the sufferer may not be aware. Just what causes this tension will depend on the particular case involved, but parents and teachers with real insight can do much to try to uncover the child's fears and lack of security. In some cases, stuttering seems to be an unconscious expression of aggression which the child cannot allow himself (or is not permitted by others) to express in natural ways. In some cases, the child is being held to standards which are too high for his own ability or development. At any rate, whatever the causes are in the case of the particular child, it will nearly always be noticed that when he is happy and relaxed, or feels himself in the presence of someone who accepts him wholeheartedly, the stuttering will be greatly lessened or will disappear altogether for the time being. The observation of such behavior should point the way to the reduction of tensions.

What to Do About It

Curing the stutterer must be put on a long-range basis, and all work should be done towards helping the child outgrow the troublesome symptom, rather than attempting immediate, short-range treatment of the speech itself. As indicated above, the first and most important step will be to try to unmask the child's basic insecurities and help to relieve him from stress. It may also be necessary to help the child learn to express honestly his disappointments and resentments, rather than bottling them all up inside, which is a common practice among stutterers. It is also helpful to find areas of competence, or things he does well, so that from them he gains a sense of his own worth. If the child himself has an anxious attitude about his speech, it will be necessary to try to relieve his fear. For instance, he may need to be excused for a time from semi-public speaking or oral reading in school. It is very important that the child does not get too worried about his speech for real anxiety will only intensify the problem. However, any speech activity which he wants to engage in should be encouraged.

In really difficult cases, it is best to seek the help of a child psychologist or psychiatrist, who can help the child feel more adequate, and offer helpful suggestions to the parents.

What not to do about it

It is very important to know what not to do with the stutterer. Remember that he is probably already an insecure youngster, and that he is probably concerned about his speech, whether he shows it or not. With this in mind, the parents and other members of the family must realize that they should never call attention to the speech problem itself. This means that they should not try to tell him how to talk; should not supply difficult words for him; should not tell him to slow down, or relax, or anything else that will call attention to his manner of speaking; and should not allow anyone else to do these things. The wise physician will caution the parent not to discuss the problem with others in the child's presence. Instead, when he is having difficulty, this is a cue for the parent to relax, and show by his attitude and patience that the child may take all the time he needs for speech, and that no one is pressing him about it. If the child himself brings up the subject of his speech, talk to him in an objective, relaxed way and try to relieve his feelings. If this approach is thoughtfully followed, the parent will be gratified before long to see that the child really is having less difficulty, and he will be on the road to outgrowing the troublesome handicap.

Parental Attitudes

Whether a child outgrows his stuttering will depend to a large extent on how he is handled. Many times parents and teachers are unduly alarmed about such a problem. They may not be able to stop feeling anxious, but they can stop showing it, and one must remember that anxiety can be shown by the tone of voice and the facial expression as well as by words. The physician can render a real help to the parent in encouraging him to try to understand and to believe that the child can outgrow the difficulty, and giving reassurance that it will take time. Above all, the alleviation of his handicap requires patience, understanding, and warm acceptance on the part of all concerned.

This is not to suggest that the child should suddenly be smothered in overprotection, and shielded from all normal frustrations. Neither is it wise to deny that the problem exists. Instead, parents and teachers should take an objective philosophy and tackle the difficulty wisely and systematically, rather than fearfully. Here again the physician's help is often needed.

Military medical officers hope enough men now will volunteer to meet requirements. They are prepared to use law's authority for mandatory inductions, but are confident that these cases will be rare. They are hopeful that the $100 bonus, which is denied to men involuntarily inducted under this act, will attract registrants to volunteer.

Woman's Auxiliary

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YOUR YEARBOOK

Your yearbook for the new auxiliary year is now ready, and if you haven't received yours, it will be in the hands of your local auxiliary president at your next meeting! Use it and depend on it for effective work this crucial year.

BE A VOLUNTEER

The state organization is undertaking a different type of endeavor on twt counts this year, in order to help our state medical society: Dr. Guyton wants the Auxiliary 1) to make surveys and whatever research and original work is necessary to beat Compulsory Health Insurance's proposals of utopian care of the chronically ill and aged; and 2) to meet the challenge of a better nursing set up.

Both of these objectives are problems demanding investigation and understanding, with one excuse for attempting their solution: You are fighting for the best interests of your husband's patient. On the strength of this one dedication depends the most effective answer.

Auxiliary members are not awake to the constructive influence they can be in earning the support of the public by proving that the problems of medical care can be solved, and are being solved, within the precincts of the profession itself. These assignments are our opportunity!

AUXILIARY MEETINGS

Northeast Mississippi Medical Auxiliary—Amory, September 12

Washington County Auxiliary—September 15

Central Medical Auxiliary—Jackson, October 3

Delta Medical Auxiliary—Belzoni, October 11

MRS. STREET ILL

Friends over the state regret that Mrs. Augustus Street, immediate past-president of the state Auxiliary, has been ill. Last reports indicated that surgery was imminent. Our sincere and prayerful wishes are for an uneventful recovery.

CRUSADE FOR FREEDOM

Beginning the second week in October all weeklies, dailies, radio broadcasting stations, and national magazines will carry concurrently an A.M.A.-sponsored nation-wide program to give an articulate expression to the plain citizens all over the land, for two reasons:

1. Doctors are determined to increase the availability of good medical care to the American people under a voluntary plan.
2. American medicine wants to alert the people to the dangers of Socialized Medicine and all other proposals which first limit freedom—and then destroy it.

Auxiliary members might well assist in local tie-in programs over the radio, in submitting articles to their local newspapers, and in paying for space to help A.M.A. prove that "The Voluntary Way Is the American Way!"

Pathology of Abnormal Uterine Bleeding*

R. A. STREET, JR., M.D.
Vicksburg, Miss.

MENSTRUATION itself is often cited as the only example of physiological bleeding. While this is not precisely correct, the fact that menstruation is a bleeding phenomenon lends a special interest to the study of abnormal uterine bleeding. In certain forms of the latter, as a matter of fact, the abnormal bleeding is due to some functional aberration of the menstrual mechanism. In others, the uterine bleeding is due to a lesion in some part of the genital apparatus. Finally, in the occasional case, some constitutional factor may be responsible for menstrual excess. In certain cases there is no doubt that there is a combination of etiological factors. In my discussion, which will follow, I have not attempted to cover any of the treatment of abnormal uterine bleeding, as this would entail considerably more discussion, and I am only going to take up the question of the pathology found in cases of abnormal uterine bleeding.

This series includes 400 cases of abnormal uterine bleeding, taken from the files of the Street Memorial—Mercy Hospital, and includes cases of early gestation up to three months. The study covers roughly a three-year period, namely, 1945, 1946, and 1947. No attempt has been made to classify the etiology of the bleeding, since certain pathological lesions were very frequently present in the same case.

The most common lesions observed in this series were leiomyomata of the uterus, these being present in 140 cases or 35 per cent of the total number. Menorrhagia was the most common complaint, being present in 79 cases, metrorrhagia in 22, menometrorrhagia in 30, and postmenopausal bleeding in 10. Colored patients predominated in number, the total being 76, against 64 white patients. Chronic cervicitis was noted in 120 cases or 30 per cent of the total. Chronic endometritis was present in 87 cases or 21.75 per cent. Incomplete early abortions numbered 87, the same as those of chronic endometritis. It is interesting to note that in this group 60 cases had a curettage following the incomplete early abortion, and 26 cases did not have any curettement following the expulsion of the contents of the uterus. In this group of cases associated with gestation, it is interesting, also, to note that ectopic pregnancy occurred 8 times associated with abnormal bleeding and only 3 cases were recorded with no history of abnormal bleeding. This type of bleeding usually was a spotty, bloody discharge from the vaginal cavity following a period of amenorrhea of either one or two months' duration.

Chronic salpingitis was present in 59 cases or 14.75 per cent, and it is interesting to note that it was usually associated with other pathology, seldom being present by itself. Carcinoma of the cervix, one of the most important pathological lesions observed in this study, was present in 54 cases and carcinoma of the uterus was present in 9 cases. It is interesting to note that in this group of cases 38 were associated with postmenopausal bleeding, 16 with metrorrhagia, 8 with menometrorrhagia, and only 3 with menorrhagia. It is, also, worthy of comment that 15 cases of carcinoma of the cervix had no history of abnormal uterine bleeding.

Hyperplasia of the endometrium occurred in 42 cases and endometrial polyps were observed in 40. Hyperplasia was not associated with uterine leiomyomata except in 16 instances. Chronic metritis was observed in 39 cases. Adenomyosis of the uterus occurred in 16 cases and in this connection a study of the cases of ovarian endometriosis revealed that only 8 cases were associated with abnormal uterine bleeding, while in 12 cases of ovarian endometriosis there was no history of abnormal uterine bleeding. Serous cystoma of the ovary was diagnosed in 10 cases and fibrosis uteri was present in only 8 cases. There were other less frequent lesions noted, these being erosion of the cervix, cervical polyps, sarcoma of the uterus and sarcoma of the cervix, theca cell tumor of ovary, Brenner tumor of ovary, squamous metaplasia of the cervix, hydrosalpinx, retained secundines, fibroma of ovary, and several cases of germinal inclusion cyst of ovary.

In conclusion, I would like to emphasize the variety of lesions observed in cases with abnormal uterine bleeding, and to stress the importance of the pathology found. While every

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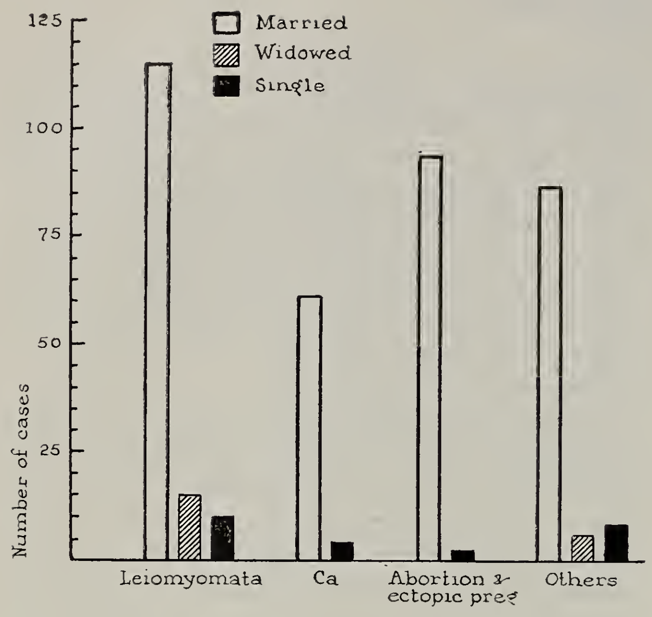
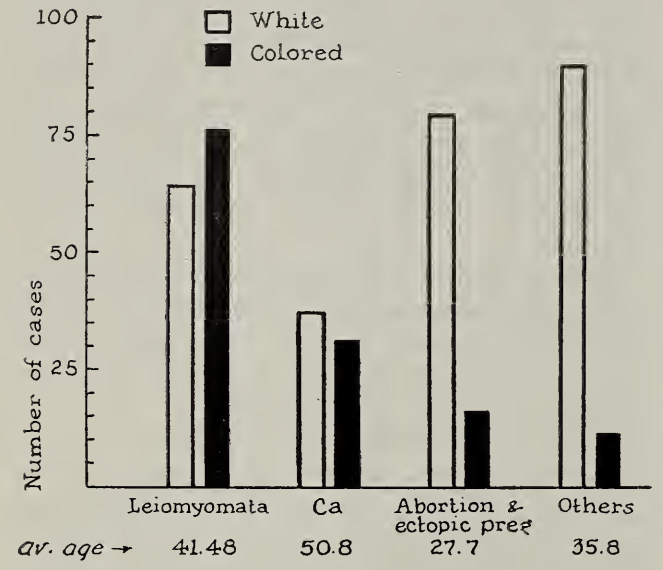
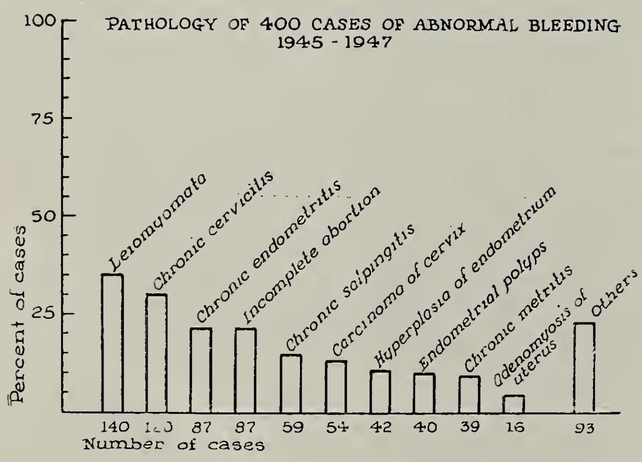
*Read before the Section on Obstetrics and Gynecology at the eighty-second annual session of the Mississippi State Medical Association, Biloxi, Miss., May 9-11, 1950.







case of abnormal uterine bleeding does not demand surgical intervention, we as physicians must be most cautious in attempting to evaluate these cases without careful examination and careful study. I have a few slides illustrating some of the more common lesions mentioned, which I would like to show now.

DISCUSSION

Dr. Claude Callender (Jackson)—Abnormal uterine bleeding is probably the most common complaint next to leucorrhea with which the gynecologist has to deal. It would therefore behoove us to keep a definite differential diagnosis on our fingertips at all times.

Statistics obtained in Doctor Street's survey do not follow the usually accepted figures. I think one would expect to find a greater number of complications of early pregnancy producing uterine bleeding, than would obtain with uterine fibroids. Perhaps the cases listed under chronic endometritis are in part old incomplete abortions. I would like to have a few words to say about the bleeding that occurs with ectopic gestations. It will be noted that Doctor Street reported eleven cases of ectopic pregnancy in which eight were associated with abnormal bleeding and three were not associated with abnormal uterine bleeding. Disturbances of menstruation are probably the second most illuminating symptom in the symptom complex in ectopic pregnancy. It should be borne in mind, however, that this is not always typical in that a period is missed and vaginal spotting follows this missed period, but that a menstrual irregularity is just as significant. The bleeding is caused by the destruction or disturbance of the pregnancy and as such may begin quite early. As a matter of fact, it may occur at or slightly before the time of the expected menstrual period. This bleeding, however, will not be characteristic of menstruation. It sometimes requires careful questioning to elicit the fact that an abnormal period did occur. Cases of suspected ectopic gestation in which there has been no abnormal uterine bleeding should be observed extremely carefully before being subjected to surgical treatment.

The Problem of Thrombophlebitis and Phlebothrombosis*

LEONARD A. BIBLE, M.D.
Jackson, Miss.

THE outlook in postoperative pulmonary embolism, which was formerly regarded as an unpredictable, unpreventable, and highly fatal surgical complication, has been completely altered within the last few years for two important reasons. The first is a changed concept of its etiology. The second is the introduction of effective prophylactic and therapeutic measures, including ligation and division of the femoral veins, and more recently, the use of dicumarol. It seems quite likely that proper precaution following the time of surgery could be a factor in lessening the number of cases developing thrombophlebitis. Following surgery, prescribed exercises according to the type of surgery performed, and the age of the patient, are instituted. Immediately we are confronted with a debate as to the rationale of getting the patient up out of bed following surgical procedure. The routine used at Louisville General Hospital, Louisville, Kentucky, is to get the patient, regardless of type of surgery, out of bed or institute exercise on the first postoperative day. With the advent of dicumarol therapy in routine postoperative prophylactic and therapeutic regimen by Barker and his associates at the Mayo Clinic, postoperative embolism was markedly reduced.

There is a probability that ninety to ninety-five per cent of all cases of postoperative pulmonary emboli which terminate fatally have their origin in thrombosi with or without inflammatory changes in the deep or superficial veins of the legs.

Any account of the known varieties of thrombophlebitis would be incomplete without some explanation of the influences which cause them to arise. For the purpose of clarifying the subsequent descriptions, the brief statements made under the following headings (some of which may be disputed) will be held significant:

1. **Retardation of the venous return:** This is probably of first importance. It comes about most naturally during life in bed. The general circulation may be feeble because of heart failure and serious debilitating diseases, or following operation or injury, because of the increased abdominal pressure of tight dressings and intestinal distention; or because of a reclining position in bed, the body being raised and the legs relaxed (loss of muscular effort in forwarding venous blood toward the heart); or during active life, because of abdominal adiposity or excessive abdominal tension; or because the legs are exposed to unnatural congestion, momentarily or otherwise.

2. **Anatomic relations in the veins of the limbs:** The areas in the lower half of the body especially liable to thrombosis are found to be the left common iliac vein, which passes at a right angle under the right common iliac artery thereby exposing its stream to especial retardation. Each external iliac vein passes behind a hypogastric artery. There are many entering veins causing confused currents in the region of the inguinal ligaments and in the upper calf and popliteal space. These and the large valves in this area combine to make eddies in which the thrombocyte ("the active villain in thrombosis") tends to settle and adhere.

3. **Changes in the blood, including dehydration:** These relate chiefly to factors which favor or oppose coagulation and are the subjects of Bancroft's "clotting index." The blood may be affected by diet and drugs and may be dehydrated by bleeding, vomiting, or excessive sweating, whether at the operating table or during an illness. Such influences, especially the dehydrating factors, tend to be preventable and remediable.

4. **Trauma:** Trauma seems often to touch off the thrombosis when the background is favorable. It may take the form of a minor accident or serious fracture, childbirth, or an abdominal operation. That it acts promptly is to be inferred from the accepted tendency today to commence precautions against thrombosis immediately after surgical operations, not some days later. Thromboses are apt to arise upon the same side as the injury, even though the fracture, if such has occurred, lies well away from the thrombosed vein. There is

sometimes a suggestion of allergy about the influence of trauma.

5. **Perivascular inflammation:** This factor is as yet little understood. Explorations by various investigators have shown that in many but not all instances of femoro-iliac thrombophlebitis there is a non-suppurative, very vascular exudate about the thrombosed vein and the companion artery, that is, about the arteriovenous bundle including the lymphatics. The origin of this is obscure, but that it is not uncommon can be implied from the arterial spasms both immediate and late which occasionally complicate phlegmasia alba dolens (femoro-iliac thrombosis). That is to say, something evidently irritates the wall of the great vein and artery producing spasm in the latter. The condition of the thrombus itself can hardly account for such inflammation, which seems a primary and not a secondary phenomenon. Nevertheless, as already stated, it is not always present nor is arterial spasm often demonstrable.

6. **The plexuses of veins draining respectively the uterus and prostate are undoubtedly the scene of thrombosis, but as yet there is no known detectable symptom-complex.** If the thrombosis which is thought to occur in these veins, gives rise to embolism the matter must be of great importance.

7. **Outspoken thrombosis seldom causes pulmonary embolism:** Quiet and actually asymptomatic processes are very apt to do so. The matter is related to the reaction in the vein wall. Thrombosis in varicose veins, for instance, the walls of which are obviously diseased, almost never causes embolism, and phlegmasia alba dolens, when attended by swelling and fever, do so relatively seldom. By contrast, the unnoticed thromboses often caused embolism.

8. **The propagating thrombus, the cause of embolism, is most apt to form an association with quiet thrombosis and in a slow stream.** It represents a soft, friable, floating clot so attached that it waves in the current of an entering vein proximal to the thrombus or grows into the open principal vein from a thrombosed branch. Small and short detached clots cause pulmonary infarction. Large ones cause fatal pulmonary embolism. Most fatal ones are ten to twelve inches long or are composed of many short, thick fragments.

Dicumarol was discovered by Link in 1940. The compound 3,3' methylenebis (4-hydroxycoumarin), formerly called dicoumarin and now dicumarol, was first isolated from spoiled sweet clover and later synthesized by Link and his associates. This compound has been shown to increase the prothrombin time definitely when administered orally to human beings. This effect is apparently the result of suppression of formation of prothrombin and because prothrombin is one of the substances concerned in intravascular as well as extravascular coagulation of the blood, a program of study in September 1941 to determine if possible the value of dicumarol in the prevention of postoperative thrombophlebitis and pulmonary embolism was carried out. The study consisted of 491 cases in the Mayo Clinic.

Dicumarol was dispensed in capsules, each of which contained 100 mg. The entire amount for each day was given as a single dose in the afternoon; 300 mg. were given the first day and 200 mg. the second day. Daily determinations of prothrombin time were begun on the third day of administration and 200 mg. of dicumarol were given if the prothrombin time was less than thirty-five seconds. Occasionally it was necessary to vary the plan of administration slightly. For instance, if patients were found to be highly resistant to the drug, they were frequently given 300 mg. instead of 200 mg., and if patients were highly sensitive to it, the daily dose was reduced to 100 mg. If the prothrombin time increased rapidly, none was given on the day it reached thirty-three or thirty-four seconds, and if it decreased rapidly, a dose was given on the day it was thirty-seven to thirty-eight seconds.

Heparin was first used but was objectional because of expense; it had to be taken intravenously; the results were unpredictable; and there was a narrow margin of safety. Dicumarol is taken orally; the margin of safety is wider; and it is relatively inexpensive.

This paper is to contain sixty-seven cases of thrombophlebitis in four groups: 1) superficial phlebitis, 2) deep phlebitis, 3) superficial and deep, 4) pulmonary embolization with and without a demonstrable phlebitic site.

1) Eleven cases—eight female and three male, ages from twenty-five to sixty-one years. Four were postpartum, two antepartum, and five cases of phlebitis of long standing. Treatment consisted of dicumarol, wet boric acid dressings to the area, and one-half grain of papaverine given prn for pain. The average number of days in bed were ten. The criteria taken for remission of the attack were diminution or disappearance of pain and tenderness of the affected area. There were normal tem-

perature, pulse and respiratory rates. Patient was allowed up from bed and an Ace bandage was applied. The average total dose of dicumarol was 1,000 mg. Patient was followed six to ten months with no recurrence.

2) Twenty-seven patients—nineteen female and eight male, ages ranging from eighteen to sixty-seven years. Four of these patients were postpartum, sixteen postoperative, and seven without any etiological factor. Treatment was elevation, a cradle over the leg, and ice bags to the maximum point of tenderness. Dicumarol was given in larger doses, 2,300 mg.; the smallest dose being 500 mg. The criteria was the same. The average time in bed was ten and one-half days; the range from five to twenty-three days. An Ace bandage was applied when the patient was allowed up.

3) Nine patients—seven female and two male, ages ranging from thirty to seventy-two. Five were postoperative, one antepartum, and three were phlebitis without any known etiological factor. Treatment was the same. The largest dose of dicumarol was 1,400 mg. and the smallest dose was 600 mg. The average number of days in bed was 14.7; the range was from five to twenty-five days. The pregnancy cases were delivered with no hemorrhagic phenomena either to the patient or the child. One case in particular was a patient of seventy-two years of age with no definite evidence of superficial or deep phlebitic symptoms. The regimen instituted was therapy for fifteen days. The follow-up course showed persistent edema. Three weeks later the patient suddenly died and autopsy showed fresh thrombosis throughout the iliac veins into the vena cava.

4) Ten patients—seven female and three male, ages ranging from twenty-eight to sixty-five years. There is no history or evidence of phlebitis. Eight of the patients had one pulmonary embolus, while three had two episodes. These patients fit into the group described by Homans as "silent thrombophlebitis" in which the first symptom is referable to the embolus and not to the original phlebitic site." Treatment was the same. While under therapy no further phenomena occurred. The average number of days in bed was fourteen, ranging from thirteen to twenty. The result was satisfactory.

Summary: None of the patients under treatment or in the post-treatment period developed emboli. In cases having had previous embolic phenomena there was no further evidence after therapy was begun. In the treatment and post-treatment periods pain, which is an outstanding feature of thrombosis, is markedly decreased in direct relationship to the initial elevation of the prothrombin time; i.e., when the patient is in the therapeutic range the amount of sedation needed is markedly diminished. Prothrombin time varies between fifteen and seventy seconds and there is no evidence of hemorrhagic diatheses. The article warns, however, against false sense of security. In any event, daily prothrombin time should be determined.

Method of Treatment: 300 mg. the first day and 200 mg. the second day. Following these doses from 50 to 200 mg. in twenty-four hours according to prothrombin time. If after 500 mg. the prothrombin time had risen to double its initial value, no further dose was given. Under this regimen there was usually a latency of twenty-four to seventy-two hours before the prothrombin time was affected. One must be wary of overdosage during the latter part of latent phase. Thirty-seven cases of postoperative sequelae, twenty-two were antepartum and postpartum cases, and seventeen were phlebitis cases without known etiological association. There was apparently no interference in wound healing or hematoma phenomena. In delivery cases dicumarol was started within twenty-four hours with normal postpartum course resulting.

The rationale of this form of therapy, reduced to somewhat over-simplified terms, may be stated as follows. Thrombosis and subsequent embolism, regardless of whatever other etiological factors are involved, occur because the mechanism of blood clotting is too effective. The use of dicumarol is a deliberate attempt to reduce the efficiency of this mechanism to the lower limit of safety by the administration of an anti-coagulant, under controlled conditions, over a certain period of time.

Dicumarol requires from twenty-four to thirty-six hours to take effect whereas heparin acts almost at once, which means that in a certain small proportion of cases heparin rather than dicumarol is the preferred drug.

Pulmonary embolism is preceded in the great majority of cases by thrombosis of the veins of the lower extremities, which can usually be prevented by the proper precautions at operation and after which can be treated by removal of the clot from the femoral vein with subsequent ligation and division, supplemented by the administration of dicumarol. Dicumarol is also a valuable prophylactic measure.

In spite of its effectiveness dicumarol, the essential effect of which is to lengthen the clotting time, is a very dangerous agent which should never be employed without adequate control in the form of daily estimation of plasma prothrombin time.

If the plasma prothrombin time becomes dangerously lengthened, as may happen even in properly controlled cases, in a patient especially susceptible to the drug, the administration of a vitamin-K preparation transfusion is indicated and seems promptly effective.

Also the effect persists from two to ten days after administration of dicumarol is discontinued.

Heparin does not affect the prothrombin time; hence, determinations of prothrombin time were used as a measure of the effect of dicumarol only. When the prothrombin time reached thirty-five seconds, administration of heparin was discontinued.

There is some experimental evidence to indicate that the elevation of prothrombin time does inhibit intravascular thrombosis. Bollman has shown that when dicumarol has been given to dogs the tendency toward clotting of blood in bakelite cannulas which have been introduced into arteries is markedly inhibited. Dale and Jaques showed that in dogs the administration of dicumarol markedly decreases the tendency to thrombosis in veins which have been crushed on a linen thread and in glass cells inserted between the carotid artery and jugular vein. Richards and Cortell have shown that after administration of dicumarol there is marked inhibition of the formation of thrombin in veins into which a sclerosing solution, ethanolamine oleate, has been injected.

The only untoward effect associated with use of dicumarol is occasional bleeding. This is to be expected with any drug which interferes with coagulation mechanism of the blood. So far, studies on both animals and human beings have failed to reveal any toxic effects other than that on the blood. In a series of 497 postoperative cases, bleeding occurred in 47. It was of minor degree possibly incidental in twenty-nine and of moderate to severe degree in only eighteen or less than four per cent. The bleeding was from the operative site in thirteen of these eighteen cases, from the urinary tract in three, from the nose in one, and from the gastro-intestinal tract in one.

As mentioned, the elevation of prothrombin time may persist for a number of days after administration of dicumarol has been discontinued. The only procedure which is effective in restoring the urothrombin time to normal once it has been elevated is transfusion of freshly drawn blood. The effect of transfusion is apparently simply to supply prothrombin. It is not felt that the rise of prothrombin time to high levels after administration of dicumarol is a cause for alarm, since even when it increases to two or three minutes, bleeding does not often occur. However, it is preferred to have it remain less than sixty seconds. It is not felt that minor degrees of bleeding from the urinary tract or from operative wounds constitutes an indication for stopping the effect of dicumarol by transfusion.

Nevertheless, if bleeding is of moderate or severe degree, a transfusion of 500 cc. of freshly drawn blood should be given and this procedure repeated at intervals until the bleeding stops. This will usually occur after one such transfusion but three or four may be necessary.

We believe that there are definite contraindications as follows: 1) renal insufficiency, 2) purpura of any type, 3) blood dyscrasia with tendency to bleed, 4) existing prothrombin deficiency such as may occur in cases of jaundice, hepatic disease and malnutrition, and 5) subacute bacterial endocarditis. Relative contraindications to the administration of dicumarol are as follows: 1) existence of ulcerative lesions, open wounds, potentially bleeding surfaces, 2) necessity for surgical operation during the next two weeks, and 3) continuous gastric drainage. In the group of cases in which relative contraindications are present if pulmonary embolism or thrombophlebitis has developed, the risk of bleeding from the use of dicumarol may be definitely less than the risk of a subsequent episode of embolism. It must be recognized, however, that if dicumarol is given to these patients, the risk of hemorrhage is increased.

Adequate elevation of prothrombin time by means of oral administration of dicumarol to postoperative patients is apparently effective in preventing postoperative thrombophlebitis and pulmonary embolism. A plan of administration whereby 300 mg. are given on the first day, 200 mg. on the second day, and 200 mg. on each subsequent day that the prothrombin time is less than thirty-five seconds (normal eighteen to twenty-two seconds) has proved satisfactory. At present it is unwise to give dicumarol unless the prothrombin time can be determined accurately each day. There is some risk of bleeding in postoperative cases when dicumarol has been given, but this risk is comparatively small. If hemorrhage occurs, it can be controlled by transfusion of freshly drawn blood.

A patient who has acute superficial thrombophlebitis does not need prolonged rest in bed and that rather, even without such rest, he or she can have the offending varicosed veins obliterated satisfactorily by a course of treatment very little or no longer than that required for uninvolved varicose veins. The patients concerned in this report presented varicose veins of varying size and distribution, but in all the greater saphenous vein was found by the palpation and percussion method to be incompetent warranting high ligation and division of the greater saphenous vein at the sapheno-femoral junction. This procedure was carried out at the earliest possible moment. None of the patients experienced more distress after ligation than they had previously. Redness and tenderness of the affected part diminished rapidly. The patients were ambulant and had no complications. Such treatment carried out in the patient's home community would permit full activity after a loss of only a few days' time.

We believe that acute superficial thrombophlebitis affecting an incompetent lesser saphenous system could be treated just as adequately by applying the aforementioned principals. At varying times there are encountered small zones of acute localized superficial thrombophlebitis in varicosities of the lower extremity in which incompetency of the system involved was not demonstrable. In such instances, when the varicosed vein is patent above the site of the thrombophlebitis, the experience has been that after this varicosity is chemically obliterated by a sclerosing solution, administered locally, equally good results in the eradication of the activity of superficial thrombophlebitis is obtained thereby.

The greater saphenous vein is divided and ligated at the sapheno-femoral junction and a sclerosing solution is injected into the distal segments. The agent most commonly used here is five per cent solution of sodium morrhuate in amounts varying from 0.5 to 3.0 cc., according to height, so to speak, of the thrombophlebitis in the greater saphenous system. In the presence of thrombophlebitis the activity of sodium morrhuate is increased. Consequently, less sclerosing solution is used in veins affected by phlebitis than in uncomplicated veins. Warm, moist packs may be applied to the affected extremity postoperatively for the patient's comfort. The patient is dismissed from the hospital a day or two after ligation to return to the clinic for further sclerosing therapy to eliminate the remaining patent varicosed veins as in ordinary treatment of varicose veins of this type.

Comments by Zucker: Dicumarol has been criticized from the point of view of difficulty of control. His experience confirms the difficulty of ideal control, but he feels that the majority of patients can be maintained within desired prothrombin time limits if the frequency and size of follow-up doses are modified according to the slope of the prothrombin curve and the response to the initial three doses, as well as according to the absolute level. With such a program the few patients who escape from control will be suffering from under-dosage rather than over-dosage, and toxic manifestations (hemorrhage) will be unlikely. Critics have stressed the danger of hemorrhage with dicumarol therapy and have suggested the possibility of other toxicity. To date no clinical or experimental evidence in the literature has shown toxidity other than hemorrhage. His experiences are in agreement with this fact. In this small series no hematomas or hemorrhages were observed. One patient had a mild transient purpura and four other patients showed transient microscopic hematuria. He feels that chance may in part account for the absence of hemorrhage in this series, but he suggests that the method of dosage may be in part responsible. The lack of significant toxicity under proper control is in agreement with the impression of Wright that dicumarol may be safer for general use than heparin.

The method of anticoagulation therapy as practiced at the Lahey Clinic is given in detail in the Lahey Clinic number of **Surgical Clinics of North America** for 1944. Briefly outlined, at the first suspicion of thrombophlebitis heparin is given intravenously, 2.0 cc. every four hours or by constant drip in doses large enough to maintain the coagulation time around forty minutes. Dicumarol is also given at the start in an initial dose of 300 mg. to a patient over 150 pounds, 200 mg. otherwise, followed by daily maintenance dose of 100 mg. When the prothrombin percentage has reached 70 to 79, generally on the third day, heparin is stopped. Dicumarol is continued until the prothrombin percentage is in the sixties. Then only occasional daily doses of 100 mg. are given if the prothrombin percentage shows a tendency to climb into the seventies or eighties. We hesitate to push the prothrombin time below forty per cent, believing lower levels dangerous and unnecessary. When the prothrombin percentage is between 60 and 70, and if the patient's surgical condition permits, she is allowed to sit up. Most patients are up and about within two weeks of their initial vascular accident.

Prophylactic measures to prevent postoperative thrombophlebitis and pulmonary embolism are effective, as illustrated by the low incidence (seven cases or 1.8 per cent) of such accidents in 381 major pelvic gynecologic operations in 1944. This method of treatment has largely eliminated the necessity of femoral ligation and has shortened convalescence to a period of usually within two weeks of the initial thrombotic incident.

The statistical significance of the reported results upon which many of the conclusions are based is open to question because the series of investigations is not adequate nor are the results sufficiently impressive to justify definite statements. This is clearly demonstrated by a comparison with other incidences of postoperative thrombosis in cases not receiving anticoagulant prophylactic measures. Thus, in a series of 4,410 consecutive operations performed at the Charity Hospital in New Orleans, exclusive of procedures on the eye, ear, nose, and throat, there were only three (0.06 per cent) cases of postoperative thrombophlebitis. Even more significant is the fact that better results have been reported following the use of much simpler, safer, and more economical prophylactic measures than the administration of dicumarin or other anticoagulant agents. Thus, Zava, using early ambulation postoperatively, reported 6,000 surgical cases, many of which were gynecological, without a single occurrence of embolism. In addition to these considerations is the fact that dicumarin, like other anticoagulants, possesses certain hazardous features. Of these the most important is hemorrhage, which in surgery obviously assumes even greater significance. Hemorrhage occurred in thirty-one cases in the series reported by the Mayo investigators, twenty-four of which occurred from the operative site; one was fatal. There were two other fatal cases apparently as a result of hemorrhage in patients with subacute bacterial endocarditis. The authors believe that dicumarin is contraindicated in such cases because in these patients there is apparently an increased tendency to bleed. Attention is also directed to certain other conditions in which the drug should be employed cautiously or not at all. These include renal insufficiency or those with an already prolonged prothrombin time, such as obstructive jaundice or other vitamin-K deficient diseases. The fact that there exist wide and as yet unexplained variations in the prothrombin and hemorrhagic response to dicumarin in different individuals, emphasizes further the practical significance of these jeopardous features.

The peripheral arterial pulse in the affected extremity is sometimes decidedly weakened. It may even disappear, in which case the leg becomes cold, bloodless and presents the appearance associated with arterial embolism or thrombosis. Many instances have now been recorded, notably in the French literature (Audier) of arterial spasm on the grand scale, serious enough to result in gangrene of the limb. Indeed, explorations have actually been known to disclose a shrunken femoral artery, lying beside a thrombosed vein (Gregoire). Leriche, who has always stressed the vasomotor disorders of thrombophlebitis as a cause of discomfort and edema, has gone so far as to treat the early stages of femoro-iliac thrombophlebitis by daily injections of procaine into the lumbar sympathetic chain which supplies the diseased leg. By securing a vasodilatation in this way vascular spasm is thought to be reduced, the discomfort lessened, and the circulation improved.

The idea of a vascular spasm, venous perhaps as well as arterial, is consistent with the observed after effect of occasional instances of phlegmasia alba dolens. We are beginning to see more and more often individuals suffering from obvious chronic vasomotor spasm following phlegmasia alba dolens. Their legs are a little cyanotic, a little edematous and rarely hypersensitive and painful. This is a state somewhat resembling reflex edema, reflex dystrophy, or causalgia occasionally develops —a vicious circle undoubtedly related to the perivascular inflammation at the scene of the original thrombosis. Post-phlebitic indurations and ulcers, not directly related to stasis in the veins themselves, are of course common and may be of a somewhat similar origin.

The course of a femoro-iliac thrombophlebitis is extraordinarily variable. A mild form causes only a moderate swelling which disappears after ten days or so and leads to almost no residual edema when the patient first gets about. A severe form, associated with fever and both local and general discomfort, results in a huge, hard limb which changes little over many weeks or even months. When at last the swelling goes down the patient is sometimes left with a limb larger than its mate and subject throughout life to some degree of edema, especially of the ankle and lower leg. Once a femoro-iliac thrombosis is established, some individuals seem to become increasingly thrombophilic. The opposite leg is involved far more often than is generally supposed, but perhaps so quietly and with so little swelling that the second process is overlooked. Occasionally a thrombophlebitis passes back and forth from one leg to another, recurring later in the one first attacked.

Should pulmonary infarction occur, the question of dividing a great vein proximal to the thrombus comes up. For those who have not as yet been treated by elevation of the lower half of the body the answer is easy. Let elevation be tried first. But should infarction occur while the patient is being exposed to the favorable effect of elevation, the answer is difficult. The proximal end of the thrombus is in the external or perhaps the common iliac vein. Suppose that those veins are approached transperitoneally as by a midline incision or exposed retroperitoneally from the direction of the crest of the ilium, the operator must then determine, perhaps through an outspoken perivascular inflammation, the upper limit of the thrombus, which may be very soft, and he must hope to divide the vein above any free portion which may be present. The operation may be worth trying in a desperate situation but until methods not now available are devised to reveal the exact situation of the thrombus and any propagating clot which may be present, it had better not be attempted.

Summary and Conclusions

1. Heparin and dicumarin are useful but not thoroughly dependable agents for the prophylaxis of pulmonary embolism. Their use is furthermore complicated by the occurrence of hemorrhage in wounds and elsewhere, which has occasionally proved fatal.

2. The surgical prophylaxis of pulmonary embolism is the procedure of choice among those who prefer more direct and immediately applicable method of blocking the discharge of an embolus. The risks of ligation of the common femoral, the iliacs, and possibly also the vena cava are minimal and are accompanied by little postoperative disturbance except for transitory increase in edema in occasional instances. This increase in edema is less likely to occur when the common iliac vein is ligated.

3. The selection of the level of ligation is made on the basis of the evidence of the extent of involvement: a) The common femoral vein is ligated when thrombophlebitis is limited to the veins below the knee or when pulmonary embolism has occurred in the absence of all signs of involvement; b) the common iliac is ligated when thrombophlebitis involves the common femoral, external or common iliac vein; c) the vena cava is ligated when the indications are that both common iliacs require ligation.

4. Since the frequency of bilateral involvement is high, bilateral vein ligation is generally indicated.

5. The occurrence of spastic narrowing or obliteration of venous channels limits the diagnostic usefulness of venography.

6. The distinction between quiet venous thrombosis and full-blown thrombophlebitis, that is, phlegmasia alba dolens or milk leg, is not a dependable means of deciding when a clot is detachable and when it is not. Therefore, exploration of most cases of so-called milk leg is advisable.

7. Early mobilization after operation does not provide full security against the development of thrombophlebitis.

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The Handling of Infertility Cases*

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INFERTILITY is properly defined as relative sterility in contradistinction to absolute sterility in which, of course, pregnancy is impossible. Infertility then, being relative, varies considerably. It is my firm conviction that of all cases eventually to bear a normal child at least 75 per cent can be corrected with the simplest measures, therapeutic and especially, instructive. The remaining 25 per cent of cases eventually to succeed require more elaborate diagnostic or therapeutic methods. Because of the limitation of time allowed me today and the limited interest in rare procedures this paper will deal only with the commoner measures employed.

There is no question but what fertility in an individual frequently — perhaps constantly — fluctuates. The ease with which success is sometimes met would suggest that one or both mates has certainly been just under the threshold of fertility. This is the couple familiar to us all who spontaneously after ten, twelve or fifteen years happens to go above the threshold and pregnancy occurs.

The approach used in the cases to be presented here could properly be called gradual or "step by step." The usual measures in order are history and physical examination, semen analysis by a urologist, B.M.R., basal working temperature charts and tubal patency test.

I think the one most common cause of failure to become pregnant is ignorance. These couples are really not infertile and in time, months or years, pregnancy would ensue. Histories will reveal many women regularly or occasionally take douches and it is common practice to get up to urinate immediately following intercourse. Instructions are always given to take no douches near the days outlined to have intercourse. Usually four days each month are circled on the temperature chart for intercourse. Unless the basal temperature readings indicate that ovulation is probably taking place at some other time, it is assumed to occur fourteen days before the next expected menses begins. Sperm probably lives three or four days in the genital tract and the ova two to three days. The fertile period then is at least two or three days, though we do not know the exact day of ovulation. Because of these factors the day before and the day after the calculated day of ovulation—rather than the day itself—is circled for exposure and these are considered the most important days. Two days later and again three days later are circled with the faintest hope of fertilization. To illustrate: (Figure I) Suppose a woman is reasonably regular on a thirty-day cycle and the next menstrual period is expected to begin May 26. The probable day of ovulation is fourteen days before then or May 12. The days suggested for coitus then would be May 11, 13, 15 and 18. Ejaculation decreases the number of sperm no matter what the original count. For this reason continence is requested for at least one week before the first circled day if the male has a normal count. If the count is below sixty million per cc. only the four days circled each month are advised.

Greenhill has stated that very likely no sperm are effective unless actually injected into the cervical os. Certainly the sperm must get from the seminal pool into the alkaline endocervix quickly else they will be killed by acid vaginal secretions. Retroversion of the uterus probably plays little or no part in sterility. In retroversions, however, the cervix usually tends to point forward. Whether the cervix is in its normal position or pointing forward it has long seemed logical to me that the seminal pool would better bathe the cervix if the hips were elevated. For this reason the patient is instructed to place a pillow under her hips during sexual intercourse and remain in that position for 45 minutes. It is suggested she urinate immediately before intercourse.

Inquiry should be made concerning the personal habits of both partners. Excesses in smoking, drinking and loss of sleep should certainly be corrected. The effects of diet on infertility can be stated very briefly. There is good evidence that a high protein, high B-complex diet is very important. The value of vitamin E is questionable. In none of these cases was there any evidence that vitamin E was of benefit and in the past two years none has been prescribed. Certainly it is not as important as adequate proteins.

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Past history concerning pelvic infections, following abortions or otherwise, and especially pelvic operations should be elicited.

The menstrual history is probably the most important of all. Ovarian good health is reflected in cyclic regularity. While we all have observed pregnancies develop in individuals with very irregular flows the fact remains that a cycle regular within 2 to 3 days every 26 to 32 days, lasting 3 to 5 days is the best indication of proper function. The absence of dysmenorrhea is of no particular importance but it has long been known that the menstrual period showing primary dysmenorrhea—cramping until the flow is well established—was almost certainly preceded by ovulation. This mechanism is unknown.

You have all seen pregnant women with obesity, decayed teeth, enlarged tonsils, hirsutism, trichomonas vaginalis, a badly infected cervix, uterine fibroids or any of a number of other conditions. It is difficult to reconcile this prototype with such relatively small conditions which we know are important in the infertile. I will spare you enumerating all lesions which may be of importance but several factors are worth mentioning. With the exception of hypothyroidism, endocrinopathies are more of prognostic value than anything else and usually very little can be accomplished. Mild hirsutism with male distribution of pubic hair is not per se a particularly bad sign. Look for foci of infection—the teeth, tonsils and cervix. Of course the cervix is of more importance than a possible focus of infection. More study should be given to the cervix than to any other one organ. Most authors agree that in the great majority of infertile couples the causes are multiple. All agree, however, that the condition of the cervix is of extreme importance. When the cervix is infected its secretions frequently become hostile to spermatozoa, actually acting as a spermacide. The characteristics of the cervical mucous plug vary with the menstrual cycle. Normally it is fairly translucent, moderate in amount and definitely sticky. When the cervix is infected, the plug is opaque, more profuse, and still sticky. During ovulation, and probably because of it, the external cervical os is slightly opened and the mucus transparent, increased in amount and less viscid. Only in this condition can sperm penetrate the mucous plug. This is an important observation and of itself is a good indication of ovulation. Because spermatozoa can penetrate the mucous plug only at this time, results of the Huhner (post-coital) test will be misleading if taken at any time other than during ovulation. This is a test for cervical secretion hostility and supplements but in no way replaces the undiluted semen examinations made by the urologist. Many mild cases of cervicitis may be relieved by office cauterization or electrocoagulation but the more severe cases can best be treated by conization of the cervix. Reports that this operation may later cause dystocia are unfounded in my experience.

Other well-known pelvic conditions will not be enumerated but it should be stated that only very rarely can major surgery in the female be expected to produce results.

Of the laboratory procedures blood counts and basal metabolism studies are the most important. Surely anemia is commonly a contributing cause. A B.M.R. should be done on every female if studies up to now have not shown one or both of the partners absolutely sterile. Thyroid extract somehow seems to increase fertility. A B.M.R. is run, then, not just to see if it is below normal but as an indication of how much thyroid extract can be given. It should be pushed near tolerance as judged by pulse rate, tremor and subsequent metabolic rate determinations.

Probably the greatest recent advance in the treatment of infertility is the routine use of the basal temperature chart. The patient is instructed to take her temperature each morning before getting out of bed. Originally rectal temperature was thought necessary but oral ones are nearly as accurate for the purpose and much less objectionable to the patient. Figure I shows a typical basal temperature record for one menstrual cycle. The body temperature remains at a relatively low level until midinterval. Usually a slight lowering of the temperature is seen at this time followed by a shift, usually abrupt, to a higher level. Opinion is divided as to whether ovulation takes place the day of the slight dip or the following day with low to high shift. Either a day or two before or the day the next flow begins, the waking temperature drops to its former low. Use of the basal temperature chart serves many purposes. Not only can the presence or absence of ovulation be determined in three out of four women but the time of ovulation can accurately be told within reasonable limits. Thus the optimal time for coitus in each cycle can be determined. Davis claims in the diagnosis of pregnancy the per-

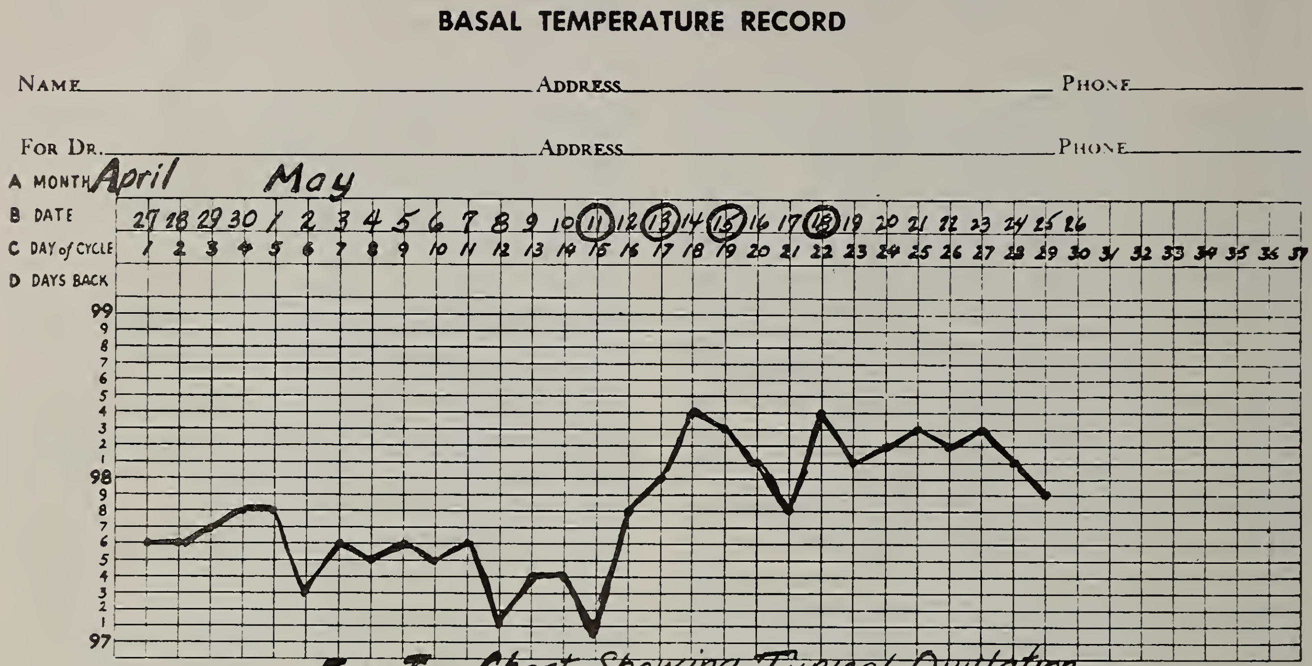

Fig. I Chart Showing Typical Ovulation

sistence of the high post-ovulatory plateau in basal temperature grafts gives the most accurate and easily obtained early evidence that conception has occurred. See Figure 2. If the plateau remains at 98.6 degrees or higher (orally) for 16 days or longer pregnancy is almost a certainty. If the temperature drops below 98 degrees the Friedman or Hogben tests need not be run as non-pregnancy is almost a certainty. The author has been firmly impressed by these facts. This year on March 3, a Friedman was negative on a patient 19 days overdue. On three successive days the basal temperature was 99 degrees. On another patient, April 9, a Hogben was negative on a patient 15 days overdue. The temperature read 98.6 degrees, 98.3 degrees and 98.5 degrees. On April 16 a Hogben was negative on a sterility patient 11 days overdue. Her temperature chart showed a sustained level about 98.4. Each of these patients is now known to be pregnant. Likewise morning temperature recordings are useful in predicting abortions. Frequently temperatures will drop several days before the first spotting. Figure 3 is an exact reproduction of the record of a patient who began spotting when two weeks overdue and aborted nearly three weeks later. This has nothing to do with infertility but one other valuable use of waking temperatures should be mentioned. In women near the menopause frequently the question arises as to whether a missed period is due to "the change" or pregnancy. At this time the biological tests are notoriously inaccurate due to hormonal changes. Definite reliance can be placed on several days' suc-

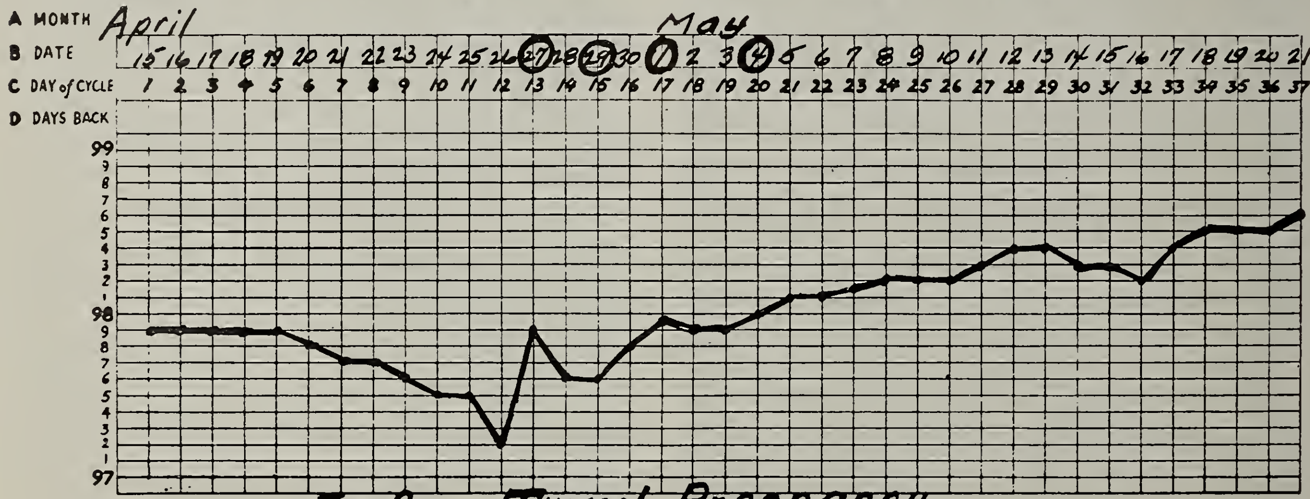

Fig. 2 Typical Pregnancy

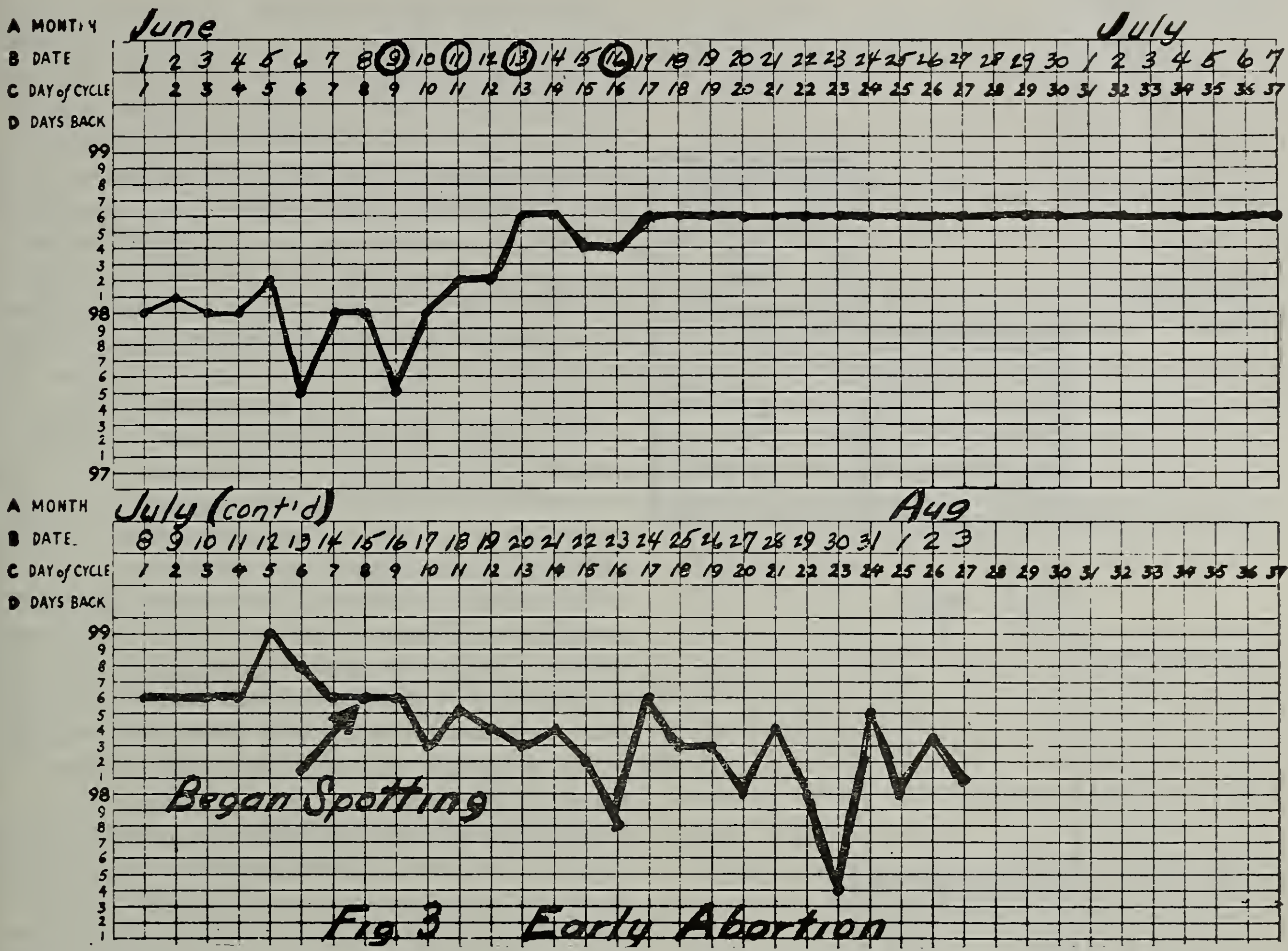

Fig. 3 Early Abortion

cessive readings of basal temperatures. The cause of this diphasic curve is academic but most authorities believe that estrogen lowers body temperature and progesterone raises it. As you know progesterone is secreted only during the second phase of ovulatory cycles. (Recently I had a patient taking 100 mgs. daily of stilbestrol for endometriosis and requested that she keep a temperature record. Such a large dose of estrogen will, of course, prevent ovulation. (Her readings averaged .6 degrees less than the first phase of the average of six supposedly normal records.) While temperature charts are valuable they are not infallible and it certainly should be stated that endometrial biopsy performed during the premenstrual stage or at the onset of menstruation is the one most reliable indication of whether or not ovulation has taken place during a given cycle. Because of the expense, time and preparation required and the danger of interrupting a pregnancy it is believed this procedure should be used only when temperature charts do not give the required information.

Tubal patency tests certainly have an important place in the handling of infertility cases. E. L. King prefers oil injection to gas because more pregnancies seem to follow the former and in some patients the opaque medium showed the tubes to be open when carbon dioxide did not. This is borne out in the series to be presented. Only gas was used in the early cases when the incidence of tubal obstruction was found at least twice as high as recent cases when only oil was used. This was despite every possible means to prevent spasm in the tubes. In addition two cases in which the tubes were not patent to air later became pregnant. None so far reported by uterosalpingography to be closed have become pregnant.

Fifty cases are reported in this series. Actually 86 charts were reviewed before the even number of 50 was found what was involved in sterility work they did not care to go through with it. Most of these represent only one office visit. Many women came in expecting a pelvic examination to be all that was required and for this reason it should be made perfectly clear at the first visit just what it entails. One year was chosen as a reasonable trial and in order to make this series as accurate as possible no case is reported whose first visit was after April 1, 1949. Figure 4 shows the

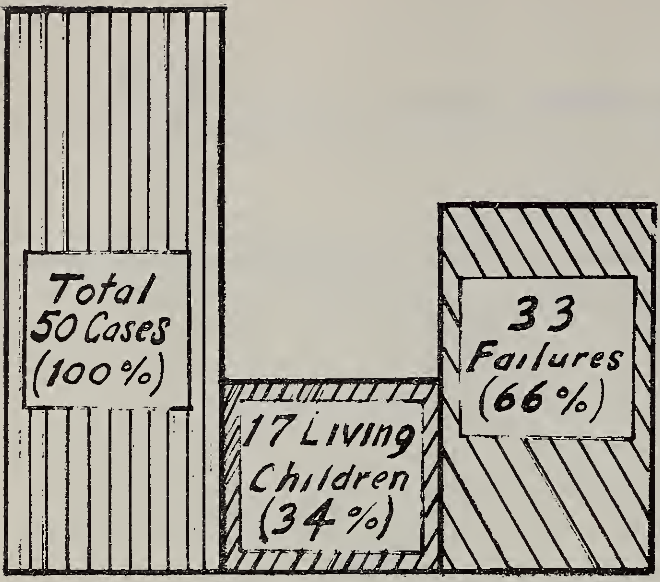

Fig. 4

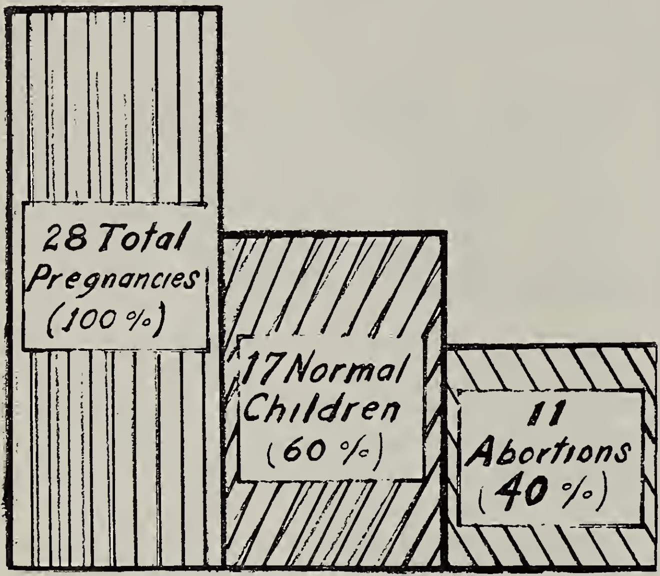

Fig. 5

results and these figures are absolutely uncorrected. The successful group showing 34 per cent represents normal living babies. Considered failures are abortions and one premature which lived eight hours and two normal babies resulting from spontaneous pregnancies several months after they were discharged (after one year) as sterility patients. In this group of 50 also were six couples who did not complete the study because one or both mates were found absolutely sterile. It is obvious then if these figures were "corrected" for several factors the figure of 34 per cent would be about doubled. The time required for these women to become pregnant varied from one to twelve months and averaged five months.

The series is too small to be of much value except in the major categories. I had hoped to have sufficient numbers of cases to determine the influence of such factors as age, ovarian pathology, infantile uterus, various infertility indices of the male, etc. However, certain trends were noted which have some significance. These are stated as generalities only.

Primary infertility was met with greater success than secondary infertility. The patient was classified as a secondary case if any pregnancy had previously taken place whether it terminated in abortion or a normal child.

The longer the duration of infertility the poorer was the chance of success.

Proper instructions concerning the time and technique of sexual intercourse gave higher returns than any other one factor.

Of organic lesions the commonest and most easily correctible were cervicitis and low sperm indices. The latter does not include aspermia in which no case met with success. Other common and easily correctible conditions include hypothyroidism, anemia, diet and excesses in smoking, drinking and loss of sleep.

Eleven additional patients, all placed in the "failure" column, became pregnant but aborted or delivered prematurely so that the baby did not survive. This gives the very high abortion rate of nearly 40 per cent, over three times that of all pregnancies.

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DISCUSSION

Dr. Robert B. McLean (Jackson)—In going over my records of those whose chief complaint was sterility, I found one hundred twenty-four. Of these, ninety-four had primary, and thirty had secondary sterility. In twenty-two, pregnancy was considered improbable. This word "improbable" is used because as long as a woman has a uterus and has menstruated within the past year, nothing seems impossible.

Dr. Simmons' problem of having patients drop out after one examination was also met. Of the whole group, only sixty-five continued treatment. Two were already pregnant so we will not count them. That leaves only sixty-three. There were three miscarriages and one tubal pregnancy, so actually there were twenty-seven normal babies, or 42 per cent. However, in point of time, one became pregnant in three months, thirteen more in six months, five more by a year, and twelve more before giving up. Thus there were only 23 per cent live babies within a year, the remaining 19 per cent of successful cases arriving too late to be acceptable for this comparison. From this it seems that Dr. Simmons could have raised his batting average considerably by extending his time limit, even though the only treatment was conservative handling of pelvic inflammatory disease and endometriosis.

His finding of primary sterility being more tractable than secondary, in contrast with the other series, also emphasizes the absence of cases treated over a year.

On the basis of this collection of cases, one readily agrees with Dr. Simmons in principle, in procedures, and congratulates him on his results.

Ignorance in timing and continence are unquestionable factors. A woman who became pregnant while confined to bed with an injured ankle, and another who became pregnant while her husband was confined to bed are exemplary. The need for general well being is exemplified by the woman who quits her job, and the man who quits drinking.

This matter of improbables needs considering. Dr. Simmons found 12 per cent while the compared series reports 9 per cent, but 25 per cent of the total cases. Seven had a marked degree of chronic bilateral salpingitis; six husbands had no sperm, and one only rare sperm; three had extensive endometriosis; and three had multiple symptomatic fibroids. Let us stress symptomatic fibroids. Even in these, it is sometimes possible to do myomectomies and have subsequent pregnancy. One of these babies was. Anovulatory cycles are not included, although one probably should be who, on biopsy, had repeated anovulatory cycles in spite of every effort, including x-ray stimulation of the pituitary, by which three out of seven so considered became pregnant. Those who unsuspectingly abort at the first menstruation do not belong because they can often be helped when the event is recognized by biopsy.

I consider it a privilege to have the opportunity to discuss Dr. Simmons' paper. It evidences the fact that he is doing a good job on a problem in which not all doctors are interested.

Dr. W. R. Bethea (Jackson)—Radiography has done much in the past several years to aid in the determination of the causes and relief of sterility. Both radiographs and therapy are being used in the study and treatment. Therapy has been used for many years in the stimulation of ovarian and pituitary function, also, in the relief of small intramural fibroids.

Kaplan cites the results of such treatment in 301 married women. Of these, 70 were not followed up; 55 did not respond to treatment; 171 got results from regulation of menstruation. Of this number 90 became pregnant, some more than once. There were 102 normal babies born from this 90 who were able to become pregnant. There are numerous others as well as my own cases that could be cited.

Radiographs of the inside of the uterus and tubes have proved very effective in determining the condition of the uterus and tubes.

Radiological technique: Patient is placed on the radiographic table on which we have stirrups. The operator places the instrument in the cervix and when ready to inject the opaque substance, the patient is slipped up on the table sufficiently to see the pelvis under the fluoroscope. The opaque substance is watched through fluoroscope as it enters the uterus and can be seen passing out through the tubes provided they are open. As soon as the opaque substance has passed through the tubes, a radiograph is made immediately using KUB technique. If the tubes do not show on the first radiograph, it is well to make a plate in twenty-four hours. If it is not convenient for the patient to return in twenty-four hours, then let her walk around for a few minutes and make a second radiograph.

Several reagents have been used as diodrast, skiodan, visco-rayopaque and lipiodol. We have practically discarded all except lipiodol which does not seem to create irritation in the free cavity. The other reagents are absorbed too rapidly for proper study.

These are a few cases selected to demonstrate the advantages of a study of the uterus and tubes with lipiodil.

Slide No. 1 shows a comparatively negative tube on the right side. On the left, the tube is apparently blocked at the distal end. This patient became pregnant after about three months of treatment.

Slide No. 2 shows a fairly normal uterus and tubes but the patient did not become pregnant at all after treatment.

Slide No. 3 shows rather marked dilatation of the distal ends of both tubes, in which condition pregnancy would be rather questionable.

Slide No. 4 shows the uterus fairly well filled and fairly normal but the distal end of both tubes is blocked. Twenty-four hour plate shows the lipiodol in the tubes after the uterus had emptied out.

Slide No. 5: This patient was rayed for a mass in the left side of the pelvis. The lipiodol is shown filling a considerable cavity in this mass which was thought to be a pus tube. Right tube is practically blocked entirely.

Slide No. 6 shows bicornate uterus with both tubes open and a fairly smooth uterine wall.

Slide No. 7 shows two separate uteri with the tube blocked on the left side in one and on the right side in the other. Both show deformity along the uterine walls suggesting small fibroids on the walls of both uteri.

Slide No. 8 is made to show the disadvantage of a substance that is absorbed before we were able to make a good study. However, in this case we know the right tube is blocked. The left is open all the way through.

The Acute Pancreas*

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THE ABERRATIONS of pancreatic development are few indeed. Excluding from this discussion neoplasms, malignancies, the rare annular pancreas, misplaced pancreatic tissue, fibrocystic disease[2] and diabetes, we are almost forced to accept Chandler Foot's[1] statement that it exhibits no developmental defects of note. Certainly it would appear that most individuals approach adulthood with a normally functioning organ.

It is my intention to discuss briefly the accepted normal physiology; some of its deviations from normal with its clinical significances; to mention some accepted clinical applications pertinent to these observations, and to draw your attention to a heretofore little recognized phenomenon which may be demonstrated in pancreatitis.

Crenshaw[3] has noted with others that treatment necessitates a basic understanding of the clinical picture, the laboratory findings, the etiological factors and possible complications in both the acute and chronic forms of the disease. Doubilet and Mulholland[4] feel that pancreatitis is a common disease and varies in its intensity from mild attacks to abdominal catastrophe. Certainly, one is impressed by reviewing the decrease in mortality in the lately reported series[4, 5, 9] now appearing in the literature, wherein surgical intervention had been deferred. While an ultra conservative point of view appears mandatory under some circumstances, nevertheless strong indications for a positive operative approach must not be submerged in this new enthusiasm. The distinction of selecting these cases is a part of this discussion.

Briefly, the pancreatic function is expressed in the elaboration of external secretions utilized in digestive functions and hormones having functional and protective importance to the organism.

The external secretion consists of: 1) coagulable protein, 2) the inorganic constituents of K, NaCl, and soda bicarbonate, 3) enzymes of which three are identifiable: a) trypsinogen, b) amylase (amylolytic), c) lipase (lipolytic).

The internal secretions or hormones are, of course: a) insulin, and b) lipocaic[5, 6].

Due chiefly to $NaCO_3$, the external secretion is alkaline, and sufficiently present to neutralize HCl and acid chyme which is passed into the duodenal lumen.[6] Here it is that trypsenogen is activated into trypsen—an active protein-splitting enzyme, as are the others respectively by interaction in the presence of calcium with enterokinase.

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It is in the behavior of these products that we draw a clue to successful recognition and treatment of the disease and its phases.

While various tests have been devised to prove the presence or absence of pancreatitic juice in the intestine, in this discussion we are more interested in its control.

Diamond and Siegal[7], Comfort and Osterberg[7] confirmed in this country the differences in volume and content of pancreatic secretion produced by nervous or chemical stimulation. The Swedish groups[7] had produced a thin watery alkaline extract by the use of secretin, a protein hormone. Secretin appears, incidentally, to be produced by action of acid chyme on some substance, perhaps the sulcus entericus in the presence of bile. Its action, after absorption, stimulates the pancreas to productivity. In contradistinction, however, stimulation of the vagus nerve produces secretion of a thick viscid fluid rich in enzymes. Bauman[7] has recently reported a large series of findings based on this action wherein Mecholyl was employed as the vagal stimulator.

Thus we have two powerful stimulants: First, chemical or secretin. Secondly, nervous or vagal stimulation, and acting in conjunction these actually dilute and neutralize the duodenal contents while providing necessary digestive enzymes[6].

In those altered functions of the gland the clinical authors universally report certain parallel observations. These include:

a. The large percentage of cases having concomitant biliary disease.
b. History of alcoholism.
c. A noticeable lack of trauma.
d. The tendency to reoccurrence.

The clinical symptoms of the disease, however, are very diverse and vary from discomfort to shock. This very diversity of syndromes has given rise to the statement that a correct diagnosis cannot be made at the bedside.[10] Dugger[8] et al[11] reviewed and listed many of these associated clinical complaints. In short, the diagnosis must be suspected, and proved by laboratory procedure. This consists essentially in measuring the blood levels of the enzymes amylase, diastase and/or lipase—all dramatically elevated in blood and urine in forty-eight to sixty hours, often to normal values. The growing awareness of ability to diagnose the disease early is just now beginning to be reflected strongly in the current literature.

The recognition of clinicopathological types of the disease is necessary to apply rational therapy. We shall review them as laid down by Siler and Wulsin[9] in a recent study:

I. Acute interstitial (edematous) type is most common form and is relatively benign. It is usually self-limiting and rarely fatal. These patients present abdominal pain, tenderness, nausea and vomiting with more or less mild incapacitating debility. All apparently show leucocytosis with shift left.

II. Acute hemorrhagic type with or without necrosis. The patients demonstrate clinically acute abdomens of greater degree than the edematous type with a tendency to become rapidly fatal. Fatality results from complications as manifested by peritonitis, masses and abscess formations. Patients show high fever and greatly elevated leucocytosis in the presence of collapse, cyanosis, dyspnoea and shock with terrific abdominal pain.

III. Acute pancreatitis with suppuration or pseudocyst formation usually appears after a long illness in which the second or first type has been noted.

These authors feel that the only operative procedure of definite help in the acute illness lay in the incision and drainage of abscesses secondary to pancreatitis. These authors were quoted since their opinion seemed to reflect the ultra conservative point of view.

It is of interest, in passing, to note that Gottesman, Bockus[10] and Bellett[11] have all described significant electrocardiographic changes in acute pancreatitis. Disappearances of abnormal tracings have been observed concomitant with improvement in the progress of the patient. Attention is called to the fact that these tracings often resemble those of the hypopotassemia associated with vomiting or dehydration.

What are the causes of acute pancreatitis? Morse and Achs[11] have reviewed the literature and listed the recorded concepts of its etiology. Essentially these reduce to a) infectious and b) non-infectious concepts of the disease.

a) Infections gain access to the gland by lymphatics, blood stream, direct contiguity, extension along the ducts and bacterial permeation from adjacent altered viscera.

b) Non-infectious concepts presuppose a mechanical stasis with chemical stimulation of inactive ferments. These ferments result from autolysis of bile, duodenal contents or degenerated pancreatic duct contents. Biliary disease is admittedly a parallel finding in the majority of cases. However, those without biliary disease must be explained. In these it is felt that toxic products develop in the pancreas itself or may be regurgitated there. It has been claimed that pancreatic juice in itself is harmless, and ligation of the pancreatic duct produces no necrosis. However, ligation of the duct at height of digestion routinely produces necrotic change in the gland.

Bile acts as a factor in production of the disease, and while it does not activate the enzymes, it does accelerate their actions. Introduced into the gland at digestion it produces pancreatitis, while sterile bile produced little reaction. Infected bile has been found potent in the production of necrosis.

Proponents of the regurgitation theory feel three factors are responsible for the disease: a) change in biliary composition, b) undue intraductal pressure of pancreas, and c) elevation of gallbladder or common duct pressure sufficient to produce reflux of bile into the gland. Bile may be forced into the gland by changes in the neighborhood of Sphincter of Oddi, which change produces a patent system between the common duct and pancreatic duct which will readily regurgitate bile into the pancreas under increased pressure on many persons.

Obstructions at the Sphincter of Oddi may be caused by stones, spasms, inflammatory swellings, mucus, parasites or venous congestion. Spasm apparently is caused by presence of dilute HCl and increased by gastroduodenitis and dietary indiscretion.

Duodenal contents may cause acute pancreatitis by regurgitation, and may explain the large number of cases having no associated biliary disease. Brocq suggested that predominance of the hemorrhagic feature of the disease is the result of trypsin activation by regurgitated duodenal contents while fat necrosis is due to bile regurgitation. If trypsin, as some think[11], necroses the surrounding tissue upon liberation in the gland, it may well execute its action on the vessels and produce hemorrhage in the presence of partial or complete pancreatic duct obstruction.

I should like to call your attention, at this point, to the work of Reitano and Loi (1934), as quoted by Schwartzman,[22] to note that a hemorrhagic pancreatitis similar to that in man was produced by elicitation of altered tissue reaction phenomenon in rabbits. The recognition of this phenomenon may well explain some clinical manifestations of the disease not especially identifiable with any of the above stated concepts.

At any rate, we perceive acute pancreatitis to be a sequelae rather than a primary clinical disease. Quick, Cole and others[11, 14] feel there is ample justification for considering acute edematous pancreatitis as a milder grade of acute pancreatic necrosis which in turn may be hemorrhagic or suppurative. Popper, Necheles and Russell[12], on the other hand believe that complications of acute edematous pancreatitis occur only in the presence of an additional factor, namely—ischemia. They feel that the poor results obtained in the past after surgical intervention may be explained on the basis of vasomotor changes, locally, in the gland. Consequently, the therapeutic results obtained heretofore in the series of Mims Gage[15] and others[13] by paravertebral block may be on the basis of vasodilatation. It is now a well accepted clinical fact that splanchnic section will alter the course of the disease, as has been attested by several authors[13, 16]. Reinhoff appears to have been the first American to attack the disease in this manner.

It is interesting to note that complete denervation of the pancreas sincerely altered the course of the disease by relief of pain and shock and relief of vasocontraction. However, resection of the vagus nerves, or interruption of nervous control of the glandular function was a disappointing procedure in man where reported.

Comfort, Gambill and Baggenstross[8] described and re-awakened interest in 1946 in what since has come to be known generally as chronic relapsing pancreatitis. The disease appears to represent a summation of repeated attacks of previous pancreatic disease. The gland becomes nodular and indurated with calcium depositions present in the necrotic areas. Fatty infiltration and pseudocysts may appear with abscesses if infection supervenes. The pancreatic ducts become obstructed and finally atrophy of the Isles of Langerhans. Obviously, the pancreatic secretion becomes diminished as a result of these changes[17]. These authors feel that alcohol on the duodenal mucosa causes excessive secretin production and, subsequently, pancreatic secretion in clinical obstruction—resulting in an acute manifestation of the disease.

The significant finding in the secretin tests of Dreiling and Hollander appears to be the lack of lowering bicarbonate or amylase content in the external secretion in biliary disease associated with pancreatitis. However, secretin tests in the face of relapsing attacks of pancreatitis invariably showed abnormally lowered bicarbonate and amylase content in the pancreatic juices. Thus we have a clinical clue to separate our two types of cases. Invariably, blood amylase and lipases are elevated early in the acute attack. While transient glycosuria is seen in the attack it tends to disappear in the interval until permanent change sets in, and the diabetic tendency remains constant. Consequently, painful diabetes should be a warning to search for pancreatic stones. Apparently, pancreatic lithiasis is seen in the roentgenogram in about twenty-eight to thirty-three per cent of these cases brought to autopsy.

In advanced stages of degeneration secondary to calculus production and obstruction fatty changes in the liver often develop. This appears to be a change secondary to inadequate lipocaic production in the damaged gland[17]. The procedures incidental to surgical search for pancreatic stones have been reviewed recently by Eliason and Welty[18].

The clinical picture of chronic relapsing pancreatitis is seen much as in the primary type, but is often complicated by icterus and pruritis. Steatorrhea appears as an expression of absence of pancreatic ferments in the duodenum. This deficient digestion is shown in the diarrhea, loss of weight, weakness and occasional diabetes mellitus, all of which add to the generalized debility. The development of pancreatic cysts demands removal, resection or anastomosis of the cyst to surrounding intestinal viscera. Occasionally, significant results have been obtained by this latter procedure.

Treatment of acute pancreatitis is yet far from satisfactory, and obviously no standardized routine of therapy may be developed. Certainly, however, it should be directed along lines of physiological consistencies.

The acute phases all demand bed rest and anti-spasmodics (NEVER MORPHINE). Inhibition of secretin function and prevention of vagal stimulation insofar as these are possible. Collection of acid chyme by Wangensteen suction. Shock is overcome by fasting blood transfusion. Replacements of electrolytes—particularly calcium and bicarbonate should be included in the intravenous fluids for replacement in the circulation. Insulin to buffer glucose feedings in the presence of diabetes. The determination of hepatic function and serum or urine amylase or lipase studies are a necessity early with CO_2 combining power and glucose tolerance. Surgical interference in the edematous type is seldom necessary and in fact should only be resorted to in the presence of complication. Relief of pressures in the common duct system sometimes is accomplished with cholecystostomy or choledochostomy, drainage of abscesses and accumulations in the lesser omentum and peritoneum, if necessary. Interval surgery to relieve all biliary tract complication is strongly urged.

It is of note that deep x-ray therapy in the acute attack has been reported[20, 19] with a varied dosage from 70-90 r. in air per treatment. These reports are inconclusive. Surgery is more productive of desirable results in chronic relapsing types of disease. It is usually indicated: a) to correct complications and sequelate of chronic pancreatitis, b) to eradicate associated biliary tract disease, and c) for relief of severe, intractible pain.

Splanchnectomy has been most satisfactory for this latter. Dubilet and Mulholland[21] utilize Colp's endocholedochal sphincterotome for destruction of Sphincter of Oddi to relieve some of its complications. Pancreaticolithotomy is, of course, necessary for calcium deposition and may necessitate removal of a portion or even all of the gland. Whipple has accomplished total pancreatectomy, as has Brunchwig, for irreparably damaged glands. This last is said to invariably precede progressive liver degeneration even though control of the diabetes has been accomplished.

Summary

1. Acute pancreatitis is not a primary disease. It occurs most often in association with biliary disease, but occasionally with no evidence of such association.

2. Symptoms of the disease are so varied as to require laboratory confirmation of elevated blood and urine enzymes before diagnosis can be established.

3. The function of the pancreas has been briefly reviewed, and elements controlling its function briefly discussed.

4. Clinicopathological types of the disease and their particular causes noted.

5. A heretofore little discussed phenomenon is mentioned as perhaps more clinically significant than previously realized.

6. Chronic relapsing pancreatitis is presented as a summation of multiple previous attacks leaving sequelae and some briefly noted, including clinical.

7. A method of differentiating between biliary associated and non-biliary disease pancreatitis is mentioned.

8. The treatment of acute primary and acute relapsing pancreatitis is very briefly mentioned.

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DISCUSSION

Dr. William C. Quinn (New Orleans, La.)—As Dr. McKinnon has demonstrated, the etiology of acute pancreatitis is far from clear. Whereas, experimentally in cats pancreatitis can be produced by ligation of the major duct and stimulating the gland by feeding, this does not seem to be true in man. Numerous surgeons in performing a pancreatico-duodenectomy for carcinoma of the head of the pancreas or ampulla of Vater have ligated the main pancreatic duct without implanting the transected pancreas into the intestine. Acute pancreatitis has not been reported as a complication of such a procedure, yet ligation of the duct was carried out and the gland stimulated by the subsequent intake of food. Likewise, neoplasms of the head of the pancreas or ampulla of Vater may in themselves produce a high grade obstruction to the duct, but these conditions are rarely associated with pancreatitis.

Most investigators at the present time favor the regurgitation theory of reflux of bile into the major pancreatic duct with the activation of the pancreatic enzymes. This forms the basis for the operative procedure, endocholedochol sphincterotomy, advocated by Doubilet and Mulholland in the treatment of recurrent acute pancreatitis. They feel that, in the absence of a stone lodged in the ampulla of Vater, spasm of the sphincter of Oddi may lead to flow of bile into the pancreas. In order for such a reflux to occur, anatomically there must be a common channel between the common bile and pancreatic ducts. Such a common channel has been found in as high as fifty-two per cent of autopsied specimens. If this theory is correct, it would seem logical that acute pancreatitis would be a more common condition.

At the present time, there is a decided trend towards the conservative treatment of this disease. Certainly, I have been far from impressed with my own operative results in the past and have been faced with approximately a fifty per cent mortality. The diagnosis should be suspected clinically and confirmed by an elevation of the serum amylase. In eighty to eighty-five per cent of cases of acute pancreatitis, the serum amylase will be found to be elevated during the first forty-eight hours. Usually the level tends to fall towards normal after forty-eight to sixty-four hours. Once the diagnosis has been made, I believe the following conservative measures should be carried out: 1) complete bed rest 2) all food by mouth withheld, 3) demerol given to control pain—never morphine as it increases the spasm of the sphincter of Oddi, 4) continuous Wangensteen suction—stomach is decompressed and acid chyle entering duodenum is reduced, decreasing the stimulation of the pancreatic gland, 5) antibiotics instituted, 6) antispasmotics, such as atropine may be helpful 7) other supportive measures, such as transfusions, oxygen, etc., when necessary. If diabetes is present, insulin is indicated 8) splanchnic blocks have been advocated by Dr. Gage in order to lessen pain and increase the vascularity of the pancreas.

If one is not certain of the diagnosis such as when the serum amylase is normal or when such a test is not available, it may well be impossible to rule out an acute surgical abdomen. Then, I believe, exploration is indicated. If an acute pancreatitis is found, a cholecystostomy or choledochostomy should be carried out in order to decompress the biliary tree. Also, the pancreas should be drained.

Occasionally as a result of the inflammation a pseudocyst or abscess of the pancreas develops. These, of course, should be treated surgically. It is well known that biliary tract disease is often associated with pancreatitis and should be corrected in the interval after the acute inflammation has subsided.

Even after all biliary pathology has been corrected, it is not uncommon to be faced with recurring acute pancreatitis. Doubilet and Mulholland feel that a high percentage of such cases are the result of spasm of the sphincter of Oddi with the reflux of bile into the pancreas. They have reported excellent results with division of this sphincter to abolish the spasm.

Not infrequently pain is the predominant symptom of these cases of chronic relapsing pancreatitis with or without calcification. Pain has been successfully controlled by bilateral thoracolumbar sympathectomy and/or splanchnicectomy. In the past, total or partial pancreatectomies have been carried out but should be avoided because of their high mortality rate.

Dr. Geo. F. Archer (Greenville)—It has been said that a surgeon is only as good as his knowledge of anatomy and it might also be added that he is only as good as his knowledge of physiology.

Dr. McKinnon has wisely based his discussion of acute pancreatitis on a thorough consideration of the associated physiology for he knows full well that such a knowledge is essential to properly planned therapy.

I have greatly enjoyed his paper. My remarks about it will be confined to a few practical suggestions for the treatment of the individual attack of acute pancreatitis.

There are those who feel that acute edematous pancreatitis and acute hemorrhagic pancreatitis are two distinct entities. This is difficult for us to believe. We feel that they represent two stages in the same disease process and that the milder edematous form may well progress to the more severe hemorrhagic form.

Recently there has been a great swing to non-operative treatment for acute pancreatitis yet some of the most ardent exponents of conservative therapy feel that surgery is desirable in the severe cases. Since it is impossible to differentiate between the mild and severe case at its onset and since the mild case may progress to necrosis, it is our feeling that surgery is the safest method of treatment for the average case.

I do not deny that conservative treatment has its place in properly selected cases, if the diagnosis can be definitely established. Still we all realize that the diagnosis can not be made from the history and physical findings alone but depends on one laboratory test—namely the blood amylase.

A blood amylase should be run on all patients with acute severe upper abdominal pain but there are many circumstances under which a surgeon might be reluctant to hang the life of his patient, who has an acute surgical abdomen, by the slender thread of a single laboratory test possibly performed under circumstances that are not ideal.

An overlooked ruptured peptic ulcer could cost the patient his life and there is the possibility of an acute pancreatitis being secondary to a perforated posterior wall peptic ulcer. Certainly it must be admitted that too much enthusiasm for non-operative treatment might result in the loss of lives that could have been saved by prompt surgery.

Our plan of treatment in the patient with acute pancreatitis who comes to surgery is briefly as follows:

If there is associated biliary tract disease, decompression of the biliary system is performed, usually by cholecystomy. This reduces the possibility of a reflux of bile into the pancreatic ducts. Stones present in the gall bladder are quickly removed.

Penrose drains are placed down to the body and tail of the pancreas through the gastrocolic omentum and to the head of the pancreas by incising the peritoneum lateral to the descending portion of the duodenum. These drains provide a passage way for the escape of necrotic and infected tissue. It is well known that a pancreatic fistula is less dangerous if it has access to the outside.

A Levin tube is left in the stomach to remove acid chyme and to prevent distention.

Penicillin and or dihydrostreptomycin is administered to minimize infection.

The blood concentration and volume are returned to normal.

The blood calcium and sugar are determined and the necessary corrections made.

Morphine, since it causes spasm of the sphincter of Oddi, is contraindicated in acute pancreatitis. In its place atropine is to be used.

While our experience with paravertebral sympathetic block is as yet rather meager, it does reduce the pain of acute pancreatitis and presumably acts by diminishing pancreatic ischemia.

Within the past six months we have had two rather severe cases of acute pancreatitis. The first, with hemorrhage, was in a middle aged male with associated biliary tract disease. The other was in a fifteen year old boy with no associated biliary tract disease but with severe fat necrosis. Both of these patients were treated surgically and both recovered. Another case, with severe necrosis of the pancreas, who was seen by our group about a year ago and treated at first conservatively, died. It is our feeling that if this patient had been operated promptly he might have had a better chance of survival.

Modern Concepts of the Treatment of Meningitis*

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BEFORE the advent of the antibiotics there was small possibility of saving the life of a patient who suffered with a meningitis other than meningococcic. The meningitis of pneumococcic, influenzal or tubercular origin was almost invariably fatal. We now have available sulfadiazine, penicillin, streptomycin, dihydrostreptomycin, promizole, and paraminosalicylic acid, aureomycin, and chloromycetin. While scarcely any physician who has been confronted with cases of meningitis would hesitate to declare himself familiar with modern methods of treatment, there is no unanimous opinion as to what constitutes modern treatment. It is the method and the route of administration of the modern drugs which at the present time bring about emphatic differences of opinion.

Hoyne[1] in a very complete resume of the modern treatment of meningitis contends that those who persist in giving penicillin, streptomycin and serum or other foreign substances intrathecally to patients suffering with meningitis are not using the most modern methods of treatment. They are still adhering to a method that was instituted in 1906 with the development of the first antiserum against meningococcic meningitis. Hoyne's criticism is based on his experience with several thousand patients suffering with various kinds of meningitis and he reiterates his objections to the use of intrathecal medication for the following reasons: 1) intrathecal medication for meningitis is not necessary, 2) it may delay progress toward recovery, and 3) it can be responsible for a number of complications, including secondary infections[2].

Still another controversial point has to do with the use of spinal puncture. There is a tendency among some clinicians to avoid doing lumbar punctures entirely, but this is an extreme view which is probably not justified. The initial lumbar puncture is necessary to establish the diagnosis of meningitis and to determine the etiological agent. It is extremely valuable to ensure the choice of the most effective drug and of the specific serum. In the opinion of Finland and Dingle[3] the lumbar puncture should be repeated 1) for relief of the sign and symptoms of increased intracranial pressure, 2) to determine the progress of the case, 3) to establish cure, 4) for the diagnosis of relapse or recurrence, and 5) for intrathecal therapy with antiserum when other methods of therapy fail.

Meningococcic Meningitis. The meningococcus should be the first organism to be suspected when a patient with the typical signs and symptoms of meningitis is seen. It is by far the most common cause of meningitis. If petechiae can be found, gram negative organisms can sometimes be isolated from the lesions, thus making unnecessary a spinal puncture. A blood culture should always be made, regardless of the clinical findings, and if necessary for diagnosis of the etiological agent. It is generally conceded that the sulfonamides are the drugs of choice in this type of meningitis. Of them, sulfadiazine is usually chosen, although some clinicians prefer sulfamerazine. There are many reports in the literature of large series of cases treated successfully with sulfadiazine and the concensus of opinion seems to be that a sulfa level of 15 to 20 mg. per 100 cc. of blood is effective against meningococcus[4]. If the patient is irrational and cannot take medication by mouth, sulfadiazine is given intravenously in the dosage of 8.1 gm. or 1½ gr. per pound of body weight. Later when oral treatment can be effected, sulfadiazine is given in the same dosage by mouth every four hours. The prognosis apparently is largely dependent upon the promptness with which the treatment is instituted as for a long enough time to prevent recurrences. Careful observation and institution of proper measures for prevention of serious complications from drug toxicity are necessary because of the high blood levels required for eradication of the meningococcus.[5, 6] Should relapse occur it may be advisable to give meningococcus antitoxin intravenously anywhere from 100,000 to 500,000 units administered in 5 per cent solution of glucose in saline with adrenalin by drip method.

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More recently penicillin has been added to the armamentarium against the meningococcus. While Hoyne[7] and his coworkers are vehement against the use of penicillin intrathecally, others[8, 9] have shown that a sufficient amount of penicillin is not diffused into the spinal fluid after intramuscular administration alone and they feel that penicillin should be given both intramuscularly and intrathecally. All observers agree that nothing that offers the slightest chance of being helpful should be denied the acutely ill and toxic patient. During the past two years we have seen one case of meningococcic meningitis, a six-year-old boy who was treated with intravenous sodium sulfadiazine for twenty four hours and then with sulfadiazine by mouth. He was also given intramuscular penicillin 400,000 units daily. He recovered without complications. He received no intrathecal medication.

Pneumococcic Meningitis. Until the advent of sulfanilamide in 1935 pneumococcic meningitis was always considered almost 100 per cent fatal. Cures began to be reported after the use of sulfanilamide, sulfapyridine, sulfadiazine, sulfathiazole, or a combination of these plus type specific serum if possible. In 1945 Applebaum and Nelson[10] reported a series of 139 cases with recovery in 49 cases. They feel, as do most observers, that the introduction of penicillin offers hope of still better results, but that the problem is still far from being adequately solved. The overall case mortality rate of pneumococcic meningitis treated with sulfonamides alone varies between sixty and eighty per cent. A summary of 162 patients with pneumococcic meningitis treated with penicillin alone in different parts of the country revealed that 88 patients died giving a case mortality rate of 54.3 per cent which is slightly better than the rate for sulfonamides alone. The failure to cure the patient who suffers from this type of meningitis may be attributed to the fact that the primary focus of infection may at times be most difficult to find or be inaccessible. One must look for primary mastoiditis, otitis media, sinusitis, brain abscess, or primary pneumonia with all of its complications. The dosage of sulfonamides is the same as for the meningococcic meningitis. Hoye[1] recommends an initial dose of 5 gm. for an adult and 2 or 3 gm. for children. The customary maintenance dosage is one gram every four hours. He suggests giving the first dose of the drug intravenously in 5 per cent solution of the sodium salt together with an initial dose of 500,000 to 600,000 units of penicillin for an adult and half that much for a child also intravenously. This is followed by the maintenance dose of sulfa and two or three intramuscular injections of 300,000 units of penicillin daily. Some authors in addition recommend the use of penicillin intrathecally but there is still much controversy about its indications or its effectiveness. Hutchin and Davies[11] reported a series of 14 children under the age of two years with pneumococcus meningitis who were treated with sulfadiazine and penicillin intramuscularly and intrathecally. It was felt that the penicillin intrathecally was helpful in the prevention of adhesions and subsequent hydrocephalus and permanent brain damage. Of the 14 infants nine survived. However, five of those who survived exhibited varying degrees of permanent central nervous system damage. Heparin has been used by various clinicians intrathecally to try to prevent the formation of dense adhesions and subsequent brain injury with questionable results. All observers agree that the presently available drugs are not adequate in the treatment of pneumococcic meningitis and one must not be too optimistic since relapse occurs so frequently due to inability to locate or eradicate the primary focus of infection[9]. Hutchins and Davies[11] conclude that the younger the patient the longer the duration of the infection the poorer the prognosis. During the past two years we have seen one case of pneumococcic meningitis—a three-year-old colored infant. He was given 400,000 units of fortified duracillin every 24 hours, 50,000 units of plain penicillin every three hours and sulfadiazine with soda bicarb on the basis of two grains per pound of body weight and parenteral fluids. He became normal at the end of the third week. He was discharged on small doses of sulfadiazine which were to be maintained for ten days.

Straphylococcic and Streptococcic Meningitis: Straphylococcic and streptococcic meningitis should be treated in the same manner as pneumococcic meningitis. They should be treated with large doses of penicillin by both intravenous and intramuscular routes. In addition a sulfonamide, preferably sulfadiazine, should always be given[1]. Aureomycin is reported to be extremely valuable in the treatment of staph and strep meningitis.

Influenzal Meningitis. The pediatrician is primarily interested in this type of meningitis since about 90 per cent of the cases occur in children under the age of five years. If the patient has all the symptoms of meningitis and the spinal fluid has a ground glass appearance, culture of the media will usually show the presence of a gram negative bacillus which is known as the Hemophilus influenza or as Phifer's bacillus. Ninety per cent of the cases of influenzal meningitis are caused by this organism and the types of influenzal bacillus A to F account for the remaining ten per cent. The general principles in the treatment of influenzal meningitis are the same as for meningococcic and pneumococcic except that the adjuvant to be used with sulfadiazine is different. It has been found by various authors that streptomycin is almost a specific for this disease. Yampolsky[12] reports 22 cases with 19 recoveries treated with streptomycin and sulfadiazine, twelve of the cases being less than one year of age. Yampolsky and Jones[12] cite the following problems in the treatment of influenzal meningitis:

1) The length of the disease prior to treat. ment.
2) The age of the patient. Patients under the age of six months are to be considered as less amenable to treatment than older patients.
3) The level of the sugar in the spinal fluid, which is of the greatest importance. Patients showing less than 15 mgms. of sugar per 100 cc. of spinal fluid should be considered as seriously ill.
4) The number of streptomycin-fast organisms in the spinal fluid. The longer the disease lasts the more opportunity these organisms have to develop and to be the cause of fatalities. Patients in whom the treatment is started early have a greater opportunity to get well.

Most observers recommend the use of one gram of streptomycin every four hours intramuscularly in adults and 25 mgms. per pound of body weight every four hours for infants and children. Yampolsky suggests one gram of streptomycin divided into eight doses daily regardless of the weight of the patient. Paine and his associates and Yampolsky[13] recommend in addition the use of 50 to 100 mgms. intrathecally for adults daily and 10 to 50 mgms. intrathecally for children daily. On the other hand Hoyne[1] maintains that intrathecal therapy is not necessary. The dosages of sulfadiazine are the same as for the other meningitides.

Alexander's rabbit serum is seldom used due to the difficulty and expense connected with its use, and the sensitivity of certain patients to it. Most observers are agreed that it is of value but that it will probably be abandoned now that newer, simpler, less expensive, and more effective methods of treatment are at hand.

The toxic effects of streptomycin include fever, ataxia, disturbance of the vestibular function, deafness, renal damage rarely, and cutaneous rashes. Few lasting effects of the drug have been observed and most toxic effects have promptly disappeared with the discontinuance of the drug. Dihydrostreptomycin which is less toxic than streptomycin and just as effective is now being used largely instead of streptomycin.

Hoyne[1] and others recommend the use of penicillin also if the patient's progress seems unfavorable and to combat the streptomycin-fast organisms which are apt to develop in the case of long duration. Drake[14] and his associates report seven cases successfully treated with aureomycin and they feel that it may represent a highly effective method of therapy although requiring further evaluation. To their patients in an unconscious state Drake and his associates administered Lederle's intravenous aureomycin giving 199 mgms. as initial dose followed by 50 mgms. every six hours. As soon as patient was able to resume feedings the oral route of administration of aureomycin was used. The oral dose is based on 50 mgms. of the drug per kilogram of body weight. With this treatment spinal fluid cultures became negative within 48 to 68 hours. Spinal fluid sugar reached normal level in 18.6 hours. Aureomycin caused a fall in temperature to normal within 96 hours after initial dose. By the fifth day the acute phase of illness in all patients had subsided completely.

Woodward and Parker[15] report two infants with meningitis caused by H. influenzae rapidly improved with chloromycetin. The in vitro studies demonstrate that H. influenzae is very susceptible to chloromycetin. Dosage in infants would approximate 100 mgms. per kilogram of weight daily in 4-5 doses.

During the past three years we have treated three cases of influenzal meningitis. One case was a five-year-old white girl treated with intravenous sodium sulfadiazine for the first 48 hours because of nausea and then with sulfadiazine by mouth. She was also given one gram of streptomycin in eight divided doses daily and 400,000 units of plain penicillin intramuscularly in eight divided doses daily. She made a complete recovery in ten days. The second case was a six months old colored infant who was treated with streptomycin one gram daily divided into eight doses, 40,000 units of plain penicillin intramuscularly every three hours, and sulfadiazine orally on the basis of 2 grains per pound of body weight. The child became afebrile within five days and the spinal fluid findings became normal at the end of the second week. Sulfadiazine was continued for three weeks. The baby made an uncomplicated recovery. The third case was a four months old colored infant who was treated in the same manner as the second infant with complete recovery in two weeks. Not any of these cases were given intrathecal medications.

Tuberculosis Meningitis. Tuberculous meningitis like the influenzal meningitis has undergone rapid improvement in treatment even though it is still almost 100 per cent fatal. It can usually be avoided as it is rarely a primary disease and usually results from contacts with persons who have tuberculosis. A lumbar puncture is essential for the absolute diagnosis by positive findings in the spinal fluid. A tentative diagnosis of tuberculous meningitis may be made when the spinal fluid shows a low or declining spinal fluid sugar, an increase in cells and protein content above normal in the absence of other organisms. If, within 24 to 48 hours, other bacteria are not discovered in the spinal fluid culture active treatment should be started while confirmation of tuberculosis is sought by guinea pig inoculation. Some of the best results in the treatment of tuberculous meningitis are reported by Lincoln and Kirmse. From December 1946 through July 1949 twenty-one children with tuberculous meningitis were treated by them with sixteen children surviving. The patients ranged from eight months to eleven years of age at the time treatment was started. Fourteen of the patients were less than three years of age. The survival time of these patients at the date of article was written ranged from three months to twenty-seven months; eight of the patients had survived from eighteen to twenty-seven months. Their plan of treatment is as follows: Streptomycin was given intramuscularly twice daily in 0.5 gram doses and intrathecally once daily in 0.1 gram doses until toxic symptoms or mechanical difficulties arose and thereafter intrathecal treatment was administered every two days in reduced dosage of .05 grams until a total of forty intrathecal injections were completed; promizole was given orally four times daily in amounts sufficient to obtain a concentration in the blood of one to three mg. per 100 cc. blood; an initial dose of one gram daily was given and in absence of toxicity the drug was gradually increased until the desired blood concentration was obtained. They state that the dosage of promizole cannot be determined on a weight basis since the rate of absorption and excretion of promizole varies with individual patients. Promizole is given to each patient for a period of three years. The only toxic effects of promizole that they encountered were cyanosis and slight enlargement of the thyroid gland and rarely breast enlargement and development of pubic hair. The most constant toxic reaction to streptomycin was ataxia.

Su and Wu[17] in Shanghai, China, used Lincoln's régime in the treatment of 16 cases of tubercular meningitis in children and report 100 per cent improved. However, their cases have not been followed long enough to be sure that there will not be relapses. They had previously treated 14 patients with this condition with streptomycin alone with eleven deaths and three recoveries. They state that the dosage of promizole is not well defined and the estimation of its efficacy by determining its blood level is unsatisfactory because a high percentage of the drug combines with plasma. They used one hundred to one hundred twenty mg. of promizole per kilo of body weight daily with no toxic manifestations and fairly satisfactory results.

The most recent drug[18] to be used in the treatment of tuberculosis is PAS, Para-amino-salicylic acid. Both in vitro and in vivo laboratory tests as well as extensive clinical investigations indicate that PAS is a valuable addition. So far the preparations of this drug are insufficiently pure to be administered in large doses to be successful without producing some toxic effects which are principally nausea, vomiting, and diarrhea.

The general conclusions as to the present status of treatment of tuberculous meningitis is given by Bunn[19] as follows: Temporary but impressive clinical remission of tuberculous meningitis is seen in the vast majority of treated cases irrespective of the gravity of the clinical picture at the time of initial treatment: few eventually survive, relapses are common. The failure to observe prolonged or even permanent remission of the disease has often been explained by the emergence of tubercle bacilli resistant to the antibacterial effect of streptomycin. Actually at autopsy when pathological examination is made of the central nervous system it is quite unusual to find streptomycin resistant tubercle bacilli in cases that have been under prolonged treatment with streptomycin. However the clinician must be aware of the three possible ways to avoid the almost inevitable relapse 1) early and adequate treatment in hope of eradicating the infection prior to permanent and irreversible brain damage, 2) addition of para-amino-salicylic acid or a sulfone to delay resistance and offer increased antibacterial protection, 3) prolonging or reinstituting treatment promptly in face of obvious relapse.

While I do not have statistics to prove this statement I believe that meningitis in this area is not as frequently encountered today as it was before the advent of the sulfonamides and the antibiotics. With these drugs the respiratory infections are cured before a secondary meningitis develops. Tuberculosis is being controlled and therefore tuberculous meningitis is less frequent.

In conclusion I'd like to summarize the present-day drugs used in the treatment of meningitis. 1) A sulfonamide, sulfadiazine preferably, should be given in all types of suppurative meningitis — Hemophilus influenzae, meningococcic, pneumococcic, streptococcic viridans, streptococcic hemolyticus, and staphylococcic, and meningitis of undetermined origin. If the patient is irrational sodium sulfadiazine should be given intravenously, otherwise the drug should be given in adequate doses orally. 2) Penicillin should be given in adequate doses to meningococcic, pneumococcic, streptococcic hemolyticus, and staphylococcic meningitis. 3) Streptomycin or dihydrostreptomycin should be given to all cases of influenzal and tuberculous meningitis. 4) Aureomycin and chloromycetin may prove equally effective or superior to streptomycin in the treatment of influenzal meningitis. 5) Promizole or para-amino-salicylic acid should be used in the treatment of tuberculous meningitis.

While there may be individual cases in which intrathecal medications are indicated a survey of literature indicated that with the exception of tuberculous meningitis just as good results are obtained without intrathecal medication.

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DISCUSSION

Dr. Ruth Burroughs (Jackson)—It is difficult to discuss Dr. Small's paper because the subject has been covered so completely and so well that there is little left to say.

I agree with Dr. Small's condemnation of intrathecal therapy. Severe convulsive seizures are not uncommon after intrathecal penicillin. And even in tuberculous meningitis perhaps we are giving streptomycin in this way because our results are still so poor that we feel we must do something. It is true that every case of tuberculous meningitis treated with streptomycin will derive some benefit from it, but the ultimate survival rate is probably not over 5 to 10 per cent and many of these will have incapacitating neurological residua.

I would like to add a word about the importance of early diagnosis. Any child with a bulging fontanel or with a stiff neck or a change in his vision should have a lumbar puncture. If the cell count is increased above normal it is wise to give sulfadiazine, penicillin and streptomycin all together immediately until an accurate laboratory diagnosis can be made and the exact type of therapy instituted.

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Urological Diseases in Children*

F. L. RAMSAY, M.D., J. U. MORRISON, JR., M.D., C. R. GILLESPIE, M.D.

Laurel, Miss.

DISORDERS of the urinary tract in infants and children are exceeded in frequency only by disorders of the gastro-intestinal tract and the common cold, the most frequent disorder of the urinary tract being infection.

The approach to investigation of urological disorders is fundamentally the same as in any field of medicine. A careful and complete history is invaluable in investigation of the urinary tract. For instance, a history of urinary infection is of more significance if there have been previous infections. In the male with his second urinary infection or in the female with her third infection, specific treatment alone is not sufficient. These children should be completely investigated to rule out or demonstrate mechanical interference of the urinary drainage and to determine the causative organism. A careful history may also prevent needless diagnostic workup. Many children are brought to the physician because of frequency of urination, but have no urologic abnormality. Some children manifest anxiety or nervousness by voiding small amounts frequently. Most of these void often in the daytime but rarely at night. It must be kept in mind that the history is not always a true indication of the seriousness of the condition. A prime example of the value of history is demonstrated in male infants with posterior urethral valves. Frequently the complaint is dribbling and only by careful questioning does one elicit a history of the child voiding a few drops fast then dribbling slowly and rarely if ever voiding a stream.

The physical examination should always include determination of the blood pressure if urinary tract disorder is suspected. As a general rule, hypertension makes the condition assume a more serious nature as it is usually indicative of serious renal damage. Inspection, palpation, and percussion are as important in the urological workup as anywhere in the body. We recently had an eight-year-old girl treated by numerous physicians for seven years for "incontinence." This child's pants were always involuntarily wet and she was getting old enough to be embarrassed when in the presence of others. On simple careful inspection urine was observed to spurt from a minute opening to the right of the urethra. Methylene blue instilled into the bladder did not pass from this orifice, indicating without elaborate investigation that this was an ectopic opening into the vestibule. Subsequently, this has been shown to be a ureter from a third kidney located just above the brim of the pelvis. This child will now be free of trouble following surgical correction. Inspection will frequently reveal the cause of pus in a voided specimen to be due to causes outside the urinary tract, as in vaginitis. Many times painful micturition is a local problem solved by looking closely. Urethral strictures are suspected on observing a small stream of urine.

Palpation of the abdomen as a part of every infant's and child's physical examination cannot be overemphasized. One patient on routine examination was found to have a large mass in the right lower quadrant which was subsequently proved to be an ectopic kidney. The most frequent malignancy of the urological tract in the pediatric age group is Wilm's tumor. This is usually first diagnosed by palpation. Neuroblastomas and polycystic kidneys have been palpated in the newborn as well as in older children. Percussion of the bladder is often the easiest way to determine if the bladder is full when one cannot be sure by palpation.

Catheterization should be undertaken only when a urinary disorder is suspected, but when this indication is present delay may be harmful. Sterile technique is mandatory in this procedure. Catheterization is the surest way of ascertaining the origin of blood or pus, but much more is to be learned from this procedure. Is the urethral meatus of normal position and size? Is the tone of the urethral sphincter normal? A flabby, relaxed sphincter in a child is most frequently due to a neurological condition such as spina bifida. Is there any obstruction to passing the catheter? If so, where is the location of the obstruction? A normal newborn female can be catheterized with a No. 8 F soft rubber catheter, but this is too large for the normal male newborn. Residual urine can easily be demonstrated by catheterization after the patient voids.

Urinalysis should be routine on all children once a year and on any infant or child who is ill, regardless of the nature of the illness. In addition to determining color, turbidity, specific gravity, sugar, and albumin, the centrifuged sediment should be routinely stained for organisms. The bacteriological findings are most important as they determine the choice of therapy. A simple thing like noting the specific gravity of the urine, can tell one whether or not he is dealing primarily with a glomerular or a nephron condition. The Fishberg test is the choice for determining kidney function in older children. Excretory urograms have a definite place in the study of the child, showing the desired outlines, and the function of each kidney. If the patient has a known nephritis or nephron condition excretory urograms should be delayed until recovery, or until the disease becomes stabilized. One should keep in mind, however, that blood and albumin may be the only indications of urinary tract malignancy. Cystoscopic examination and retrograde pyelograms are best done under anesthesia, as children become easily frightened and uncooperative and thus may injure themselves. Caution and gentleness are to be used in all instrumentations of children as their tissues are easily injured.

Most congenital anomalies are non-pathological, do not interfere with normal function, and when found are best noted and left alone. This same rule applies to adults. Those that are known to be pathological should be surgically corrected as soon as possible.

The commonest anomalies seen are phimosis, paraphimosis and hypospadias. The first two can be prevented by a dorsal slit or circumcision of the male within the first two weeks of life. Circumcision reduces the incidence of carcinoma of the penis. In hypospadias early circumcision is contraindicated, as the foreskin is used in its surgical correction. Dodson says that hypospadias is best corrected under five years of age, and others prefer to wait until about the tenth year. We feel that correction should be undertaken before the boy is exposed to the psychological trauma of realizing he is different from normal boys.

Strictures of the urethra are not too uncommon and are located anywhere from the external meatus to the neck of the bladder. Meatotomy will correct meatal strictures. Those in other locations are well controlled by dilatations at intervals. Congenital valves and constriction of the vesicle neck are dangerous to the life of the patient. The residual urine causes back pressure, damaging the kidneys and leading to infection that cannot be controlled until proper drainage is instituted. Congenital valves are easily destroyed by electrocoagulation in about five or ten minutes. Contracture of the vesicle neck requires the same type of resection as the prostate in the adult male.

Malformations of the upper urinary tract have been found in every conceivable form that one can imagine. We had a six year old male that had a hard mass in the right lower quadrant which on x-ray study was found to be a non-pathological ectopic kidney. These that have obstruction develop hydronephrosis. Aberrent blood vessels and high insertion of the ureter on the pelvis are more common, but other things may produce it, as in one case a retrocoecal appendix was found coiled around the ureter producing obstruction. A huge hydronephrosis due to a high insertion of the ureter was seen in a two-and-a-half-year-old colored male child whose only complaint was of being "pot bellied." He had a protruding abdomen with a fluctuent mass filling the entire left abdomen and extending three fingers' breadth to the right of the midline. Intravenous urograms showed a normal right kidney with normal function and on the left a small amount of the dye in the lateral part of the mass. Barium enema and gastro-intestinal series showed the stomach and all of the small and large intestines occupying a small portion of the right side of the abdomen. An abdominal incision was made. The ureter was seen coming up over the anterior surface of the mass and entering on the superior surface. The good condition during the operation and the smooth convalescence was due to close cooperation of urologist and the pediatrician in which the latter undertook the administration of blood and fluids from the time the patient was put on the operating table until he was discharged from the hospital.

Acute nephritis in children, in contradistinction to nephritis in the adult, is a relatively mild disease. The great majority make a complete recovery in a short time. The treatment is symptomatic and should not be drastic. The principal aims of therapy should be to relieve the hypertension, usually with magnesium sulfate; to maintain fluid balance; to maintain nourishment with a salt poor diet; and to keep the patient in bed until complete recovery has occurred. The sedimentation rate is a good index of recovery. Foci of infection such as tonsils and teeth should be removed after recovery.

Chronic nephritis presents a more gloomy outlook particularly when hypertension persists. Some of these cases have no other symptoms. We have one boy with progressive hypertension whose urine has been clear one year. He feels well, is going to school, but has a poor chance of reaching adulthood. The nephrotic is characterized by remissions and exacerbations of edema, albuminuria and serum proteins. If hypertension is absent the prognosis is relatively good. Specific therapy for intercurrent infections has contributed more to the longevity of these cases than has any other factor. Diuretics should be used with caution. Diet should not be restricted except for a low salt content. Paracentesis should be done when indicated.

Wilm's tumor, which is a mixed embryonic tumor of the kidney, is the most frequent urinary tract malignancy and should be suspected in all recurring upper urinary infections and in all palpable abdominal masses in children. The best treatment is nephrectomy with postoperative radiation, but even with this, the salvage rate is extremely low. The answer to Wilm's tumor is not yet found. Any intra-abdominal mass is considered malignant until proved otherwise. Procrastination and delay are dangerous. The diagnostic workup should be done as fast as possible and correction instituted promptly.

Conclusions

1. Attention to minute details of the history and physical examination are emphasized.
2. A broad outline for investigation of a child suspected of having a urinary tract disorder is presented.
3. Some of the indications for specialized diagnostic procedures are stated.
4. Comments have been made on some of the more frequent urinary disorders encountered in children.
5. Cooperation of the pediatrician and urologist in pre- and post-operative care especially in fluid administration will undoubtedly make the child's course easier and safer. We think this is the answer to Mahorner's excellent paper on surgery in children.
6. Make certain in renal surgery that there is at least one good functioning kidney.

DISCUSSION

Dr. Temple Ainsworth (Jackson)—Dr. Ramsay has brought to your attention some of the common urological conditions seen in children and has re-emphasized the value of a complete history and thorough physical examination.

Disturbances of the urinary tract in children usually parallel those seen in adults except that anomalies and malformations of the genito-urinary tract play a more important part. Many physicians hesitate to have special urological investigations in children but certainly it is better to have such investigations early than to wait until irreparable damage has been done. Urological investigations can be carried out without difficulty in very small infants and recently I had occasion to cystoscope and make retrograde pyelograms on a premature child three weeks old, weighing six pounds.

In discussing this paper, I would like to answer two questions frequently asked me by referring physicians. One of these questions is, Which patients having a hypospadias should have an operation to correct the deformity and at what age should this operation be performed? My answer to this question is that operative interference is not necessary or desirable if the urethral opening is located at the gland or immediately below it. Cases of penile, scrotal or perineal hypospadias require correction. The correction of the downward curvature, or ventral chordee, should be performed when the boy is about eighteen months of age so that the corpora cavernosa will develop normally. The correction of the abnormally placed meatus may be performed at any age but, as Dr. Ramsay mentioned, for psychologic reasons it may be best performed before the child realizes he is different from other boys. Dr. Ramsay has pointed out to you the importance of not circumcising these children as the foreskin is needed in correcting the deformity.

Another question frequently asked is, what to do about patients with undescended testicles. Descent of the testes into the scrotum normally occurs in utero prior to the ninth month but occasionally takes place shortly after birth. It seems obvious that the undescended testicle should be placed in normal position as early as possible; however, since seventy to seventy-five per cent of undescend-

(Continued on page 189)

The Mississippi Doctor

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Editorials

STATE HOSPITAL MEETING

Our state hospital Association meets at Biloxi on October 12 and 13. This meeting should be of importance to doctors, hospital officials, and the people. Our state is taking the lead for the nation in supplying good hospitals as an essential in the distribution of medical service. It is therefore important that our hospitals be administered so as to aid in giving the best medical service at the least possible cost. Voluntary insurance is of recognized importance, the Blue Cross-Blue Shield particularly endeavoring to offer a good insurance contract that will pay both the surgeon and the hospital, serve the sick and be comforting to the well.

The medical profession can not afford to refuse a keen interest in hospital service. Its sympathies and understanding are still the soul of an institution. We see no doctor's name listed as an official of the State Hospital Association. Yet the medical profession has a lot to say about Harry Truman and Oscar Ewing turning over the treatment of the sick to the laity. The doctors can not lose interest for, after all, the service that goes by way of the hospital depends much on the doctors behind it.

The Mississippi Chapter of General Practice meets at Meridian on October 11 and 12. A fine program has been arranged. The Academy in Mississippi is gaining at a rapid rate and is destined to serve a fine purpose. We can not praise the research mind and the specialist in medicine above the man in general practice. General practitioners of both medicine and surgery have not been recognized according to their worth nor have they been given credit for the real service they have rendered. It takes art, constructive thinking and human interest to apply the advances in modern medicine successfully. In our human affairs the general man in medicine and surgery must be the cornerstone if we are to build a citizenship adequate to meet the emergencies of the times.

The Academy of General Practice is coming to the rescue of free medicine in a telling way. Its journal is reaching out to grass roots thinking from the grass roots of the profession. We need to know what the doctor at the cross roads is doing and how. Much of this information is much better and fresher than that which comes from the libraries and has been copied and recopied.

Dr. J. B. Howell of Canton is the able and progressive leader of the Academy in Mississippi. Drs. Kety of Picayune and Johnson of Pelahatchie have been leaders in the organization from the beginning.

The Southern Medical Association meeting is just before us, November 13-16 in St. Louis. St. Louis is a strategic city connecting the North and the South, the East and the West and a most important site on the Father of Waters. In location and in accommodations it is the choice city of the nation for a medical meeting like the Southern and the Academy of General Practice.

The Southern is one of the great medical associations of the world in its easy channeling of scientific medicine. It was the very first to recognize the importance of general practice and to put in a section on this. The fellowship at the Southern is always the very best and the medical information gained is always very helpful.

Dr. Hamilton McKay of Charlotte, North Carolina, is the honored president this year, Dr. Curtis Rosser of Dallas, Texas, is president-elect, and Dr. Wilkerson of West Virginia is the very able vice-president. You will enjoy the Southern in St. Louis.

THE PHYSICALLY HANDICAPPED

National Employ the Physically Handicapped Week, October 1-7, poses a direct challenge to the medical profession. The medical profession has been and must continue to be interested in our human resources. It is by dedication bound to have a big part in building human resources as well as in helping to conserve them. We are wasting the resources of the aged. They have limited but valuable physical assets of knowledge and wisdom to add to our riches if only utilized. Chronic illness that maybe produces no scars is adding to the load of those who carry the burden. But we are thinking more especially of the physically handicapped in our active working ranks. It is estimated that we have six million in our working forces and more than a million who could be added if properly trained.

We think first of the physically handicapped from the battlefields and give them more attention, which is right. But we must broaden our base. War does not produce the big percentage of the handicapped. While fifteen hundred lost their eyes in the late war, sixty thousand were made blind in the civil ranks. We think of industry furnishing the large portion of handicapped in civil life, but the home, the farm and the highways have long since taken the lead. The community hospital now has a big responsibility in taking care of this great load in traumatic surgery. More lives have been lost celebrating the Fourth of July in the last fifty years than it cost to secure freedom. The Ford plant employs many from the ranks of the handicapped, not because they are handicapped, not because of their disability, but because of their ability. The handicapped have proved to be a bit more efficient and a bit more dependable than the ones who are not.

The medical profession should be active in helping to prevent injuries and then next it should be very active in removing the disability. It is said that 97 per cent can be put where they can do some work. The physically handicapped also often make up in a big way with heart and soul power.

Don't ignore the handicapped. Think of Milton of Paradise Lost, genius who was blind, Edison who was deaf, Mordecai Brown who had only three fingers on his pitching hand, King Kelly, football hero of Princeton, who had a club foot, and President Roosevelt who was a victim of infantile paralysis.

Let us broaden our base and do our part in building, conserving and utilizing all our human resources for the good of human society.

The Central Medical Society had a fine program on the third of November put on by the faculty of the Medical School of Arkansas. We congratulate the Central Medical Society and we were delighted to have the fine faculty from Arkansas to pay us a visit.

The September meeting of the Northeast Mississippi Medical Society was held in Amory, the home of the beloved Dr. G. S. Bryan, the sage of Monticello in this society. The program was a good one. Dr. C. C. Pyle of Saltillo was presented his fifty-year certificate and pin by Dr. R. B. Caldwell of Baldwyn.

Our next meeting will be in Tupelo. Here we always have a fine attendance and a good meeting.

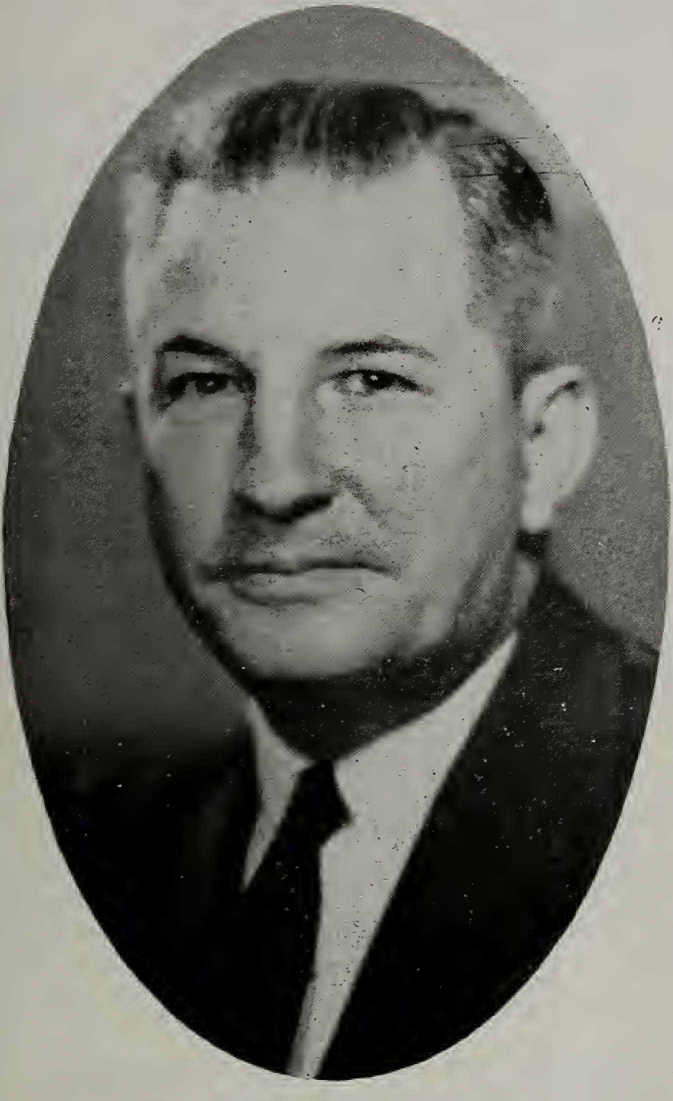
As for biographies of the year, surely **Woman's Doctor** by the beloved and scholarly Dr. Seale Harris is far ahead for this year.

MISSISSIPPI AOG

The Mississippi Association of Obstetricians and Gynecologists will hold its semi-annual meeting at the new country club at Greenville, on Thursday, October 26, 1950. Dr. Frank Whitacre of Memphis, Tenn., will be the guest speaker at the dinner meeting which commences at 6:30 p.m. All the physicians of Mississippi are invited to attend the dinner meeting. Anyone desiring to attend can make reservations with Dr. I. J. Newton of Greenville, Miss.

News and Comment

PRESIDENT OF SMA



Dr. Hamilton W. McKay

A prince among North Carolinians, and the third from that state to send up an adopted son for the presidency of the Southern Medical Association, Dr. Ham McKay is a highly successful urologist from Charlotte, his brother, Dr. R. W. McKay, and Dr. G. H. Baird sharing the association in their urological clinic.

A South Carolinian by birth, Dr. McKay had his basic education at Davidson College, after which he received his M.D. degree from Jefferson Medical College in Philadelphia in 1910. Internships in Philadelphia and New York and postgraduate work at the Sorbonne in Paris in 1919 preceded his location in Charlotte.

Dr. McKay.s memberships are impressive enough, but his personable attributes account for the love and esteem in which he is held by his confréres. Every inch a Southern gentleman, he loves life and laughter, is a loyal and dependable friend, and holds high the trust that Southern medicine has placed in him.

The Southern Medical Association meets in St. Louis, Mo., November 13-16 at the Jefferson Hotel.

REGIONAL MEETING—AMERICAN COLLEGE OF PHYSICIANS

The Mississippi Regional Meeting of the American College of Physicians will be held at the Heidelberg Hotel in Jackson, October 7, with Dr. John G. Archer, F.A.C.P., Greenville, College Governor for Mississippi, presiding. The program, beginning at 1:00 p.m., includes:

Felix Underwood, M.D., F.A.C.P., Jackson, The Development of a Rural Medical Service—What Mississippi Is Doing About It.

C. M. Mezey, M.D., Gulfport, Miss., Aging in the Willis' Circle.

Philip Work, M.D., F.A.C.P., Long Beach, Miss., The Non-Arteriosclerotic Nervous Diseases of Old Age.

Lyle Motley, M.D., F.A.C.P., Mempis, Tenn., Headache.

John T. Lane, M.D. (Associate), Biloxi, Miss., Experience with and Treatment of an Unusual Case of Enterococcal Endocarditis.

Philip H. Jones, M.D., F.A.C.P., New Orleans, The Treatment of Chronic Ulcerative Colitis by Diet.

Robert E. Stone, M.D., F.A.C.P., Birmingham, Ala., A Discussion of Some of Our Current Problems in Nutrition

The guest of honor at the banquet following the session will be William S. Middleton, M.D., F.A.C.P., President of the American College of Physicians, whose subject will be "The Open Mind in Medicine."

AMA CLINICAL SESSION

The AMA four-day clinical sessions and meetings of the House of Delegates will be open to all members of the medical profession, December 5-8, in Cleveland, Ohio.

Color telecasts of surgery, clinical treatment and examination at University Hospital in Cleveland are earmarked as one of the highlights of the meeting.

Another outstanding event will be the election of America's typical family doctor to receive one of medicine's highest honors—the

General Practitioner's Award. Doctors in line for this recognition are nominated annually by local and state medical societies and elected by the House of Delegates.

Last year's Clinical Session in Washington, D. C., drew over 4,000 doctors from every part of the United States. This year, the A.M.A. has issued a blaket invitation to all members of the Canadian Medical Association, which should increase normal attendance.

ANNOUNCEMENTS

The annual meeting of the Southeastern States Cancer Seminar will be held in Jacksonville, Florida, November 8, 9, and 10, 1950, at the George Washington Hotel auditorium. A well-rounded program has been planned which will be of interest to every branch of medicine.

The following is a roster of speakers:

Dr. George C. Andrews, New York; Dr. George P. Cahill, New York; Dr. Bradley L. Coley, New York; Dr. Lloyd Craver, New York; Dr. Harold W. K. Dargeon, New York; Dr. Robert A. Kimbrough, Jr., Philadelphia; Dr. Frank H. Lahey, Boston; Dr. Hayes E. Martin, New York; Dr. Richard Overholt, Brookline, Mass.; Dr. Eugene P. Pendergrass, Philadelphia; Dr. Edgar R. Pund, Augusta, Ga.; Dr. James Elliott Scarborough, Atlanta, Ga.; Dr. Shields Warren, Boston.

The seminar is being sponsored by the Duval County Medical Society, the Florida State Board of Health, and the American Cancer Society Florida Division. **There will be no registration fee.** Request for hotel reservations may be made to the American Cancer Society Information Center, 429 West Duval Street, Jacksonville, Florida.

The Jackson Urological Clinic announces opening of offices at 745 Carlisle, opposite the Baptist Hospital, Jackson, Mississippi. Cyrus C. Johnson, M.D., and Onnie P. Myers, M.D., urology and orological surgery.

The Stingily Clinic announces the association of Bruce J. Franz, M.D., Diplomate American Board of Surgery, in the practice of general surgery, 412-424 Threefoot Building, Meridian, Mississippi.

LETTER TO THE EDITOR

Every physician in Mississippi, in the South and the world at large should buy and read Dr. Seale Harris's **Woman's Surgeon,** the life story of Dr. James Marion Sims ,an eminent Southern surgeon and gynecologist.

Dr. Harris is notably fitted for this fine task and we honored him for giving to the world this monumemtal work.

Dr. Frank K. Boland, a destinguished surgeon of Atlanta, has written a highly pleasing biography of Dr. Crawford Williamson Long —**The First Anesthetic.**

Several years ago we had the pleasure of writing in your esteemed journal sundry articles on Dr. Long's priority in the use of ether as an anesthetic in surgery. The United States Government issued a stamp bearing the likeness of a Georgia village doctor named Crawford Williamson Long, and stating "Performed first successful surgical operation under ether anesthesia at Jefferson, Georgia, on March 30, 1842." Dr. Boland's book should also be in the libraries throughout the country.

Dr. L. L. Minor

WANTED—Physician ineligible for military service to take over large general practice. Office with x-ray and laboratory for rent. W. W. Pearson, M.D., West Point, Miss.

PRIZE ESSAY CONTEST

The American Dermatological Association is offering a prize of three hundred dollars for the best essay submitted of original work, not previously published relative to some fundamental aspect of dermatology or syphilology.

Manuscripts typed in English with double spacing as for publication, together with illustrations, charts and tables, are to be submitted in triplicate not later than February 1, 1951, and should be sent to Dr. Louis A Brunsting, Secretary, American Dermatological Association, 102-110 Second Avenue, Southwest, Rochester, Minnesota.

The next annual meeting of the American Dermatological Association will be the Diamond Jubilee Observance of its founding and will be held May 23-26, 1951, at the Homestead, Hot Springs, Virginia.

INTERPRETING MEDICAL LITERATURE

PEDIATRICS

Adjustment of Electrolytes and Water Following Premature Birth — Clement A. Smith, Simon Yudkin, Winifred Young, Alexandre Minkowski and Margaret Cushman, Harvard Medical School and the Boston Lying-In Hospital, Boston, Mass.—Pediatrics 3:34-48, January, 1949.

"Premature infants at the Boston Lying-In and Children's Hospitals are given no water or food for two to four days after birth. Although this period is referred to below as one of dehydration, the loss of body water may actually be advantageous to the infant. Measurements of water, electrolytes, urea, and total nitrogen have been made upon complete collections of urine during this phase and the first few days of feeding which follow it.

"Eleven infants thus far investigated have shown: 1) loss of both intracellular and extracellular electrolytes during the "dehydration" phase; 2) rather uniform ability to conserve water by concentration of urine (though not to adult levels), and 3) outgo of nitrogen disproportionately less than that indicated by potassium loss from tissues. No rigid pattern of electrolyte-water-nitrogen removal and restoration has emerged. Instead, the infants have displayed either of two different patterns. One of these is marked by early loss of large amounts of sodium, water, and nitrogen. The infants of this group (who are clinically more or less edematous at birth) either re-accumulate sodium very slowly after feeding is begun or after electrolytes are supplied in the feeding. Infants in the other group show much smaller losses during "dehydration" and their pattern of reaccumulation includes more rapid replenishment of sodium. No apparent relationship between obstetric history or fetal age and the performance of the infant was shown by these data."

COMMENT: From a standpoint of experiment and an interesting study, all in all this is a very interesting article; however I would question the advisability of the procedures indicated in this abstract as a general provision. There are many premature infants for whom starvation for four days would be inadvisable, and there is also doubt in my mind as to the advantages in such practice for the benefit of an endematous infant. However this is a very interesting article and one that deserves a great deal of consideration. I think it is well to think it over very carefully before adopting the principles advocated in this article.

Urological Diseases in Children

(Continued from page 184)

ed testicles move into the scrotum at or before puberty, it does not seem logical to operate at an early age. This descent is thought to be due to excretion of gonadotrophic hormones by the pituitary gland. If this does not occur normally, I feel that, beginning one or two years before puberty, the child should receive antuitrin S, dosage 500 rat units three times a week for ten to twenty weeks depending on whether or not any progress is being made. If this therapy fails, a mechanical feature may be considered to exist and surgery is definitely indicated. Hormone therapy and/or surgery should be done before puberty because patients with spontaneous descent or operative placement after puberty remain sterile. It has been shown without question that spermatogenesis ceases after ligation of the internal spermatic vessel; therefore, in performing the operation, it is imperative that these vessels be preserved.

I want to thank Dr. Ramsay for the privilege of discussing this excellent paper and to thank you for your kind attention.

STATE BOARD OF HEALTH

FELIX J. UNDERWOOD, M.D.

VITAL STATISTICS—1949

by
Margaret E. Rice
Public Health Statistician

The 1949 **Annual Bulletin of Vital Statistics,** prepared by the Public Health Statistical Service of the State Board of Health, contains considerable information, including analyses, which should prove of value to physicians and others throughout the state. The **Bulletin** is issued in two volumes and is based upon data obtained from records of births, deaths, stillbirths, marriages and divorces collected through the Division of Vital Statistics. Volume 1 contains an analysis of the data and summary tables for the state, for the 82 counties, and in some instances for the cities with populations of 10,000 or more. Volume 2 contains a summary sheet for each county of the state and will be sent only to those persons interested in detailed county tabulations. Copies of both volumes may be secured from the State Board of Health upon request by those who have occasion to make frequent use of the information contained.

BIRTHS

Live Births: There were 66,128 live births to residents of Mississippi registered during 1949. This number exceeded the number in 1948 by 837 and lacked only 163 of reaching the peak number registered during 1947. Based on estimated population, the total birth rate in 1949 (28.1 per 1,000 population) was slightly higher than the 1948 rate of 28.0. The rate for whites was 24.0, a continued decline from the 1947 and 1948 rates, while the rate for non-white increased from 29.9 in 1947 to 31.2 in 1948 to 32.5 in 1949. There were 33,683 males and 32,445 females born during the year, with a ratio of 1,038 males to 1,000 females, the same ratio as in 1948.

The residence of almost three-fourths of the mothers was stated as rural; 67.0 per cent of the white mothers and 77.9 per cent of the non-white lived in rural areas. A comparison of the occurrence and residence data indicates that many of the white mothers and a few of the non-white mothers went to cities for delivery.

Of the 66,128 live births to residents of Mississippi, 6,382 or 9.6 per cent were recorded as illegitimate, 270 whites and 6,112 non-whites.

The distribution of live births by attendants is shown on table 1. About four-fifths of the white mothers were delivered in hospitals, but only a sixth of the non-white births were in hospitals. There were over a third of the total live births delivered by midwives, and almost two-thirds of the non-white births were midwife deliveries. According to the latest information available (1947), Mississippi is the only state in which less than half of the deliveries occur in hospitals.

Table 1. Distribution of live births by race and attendant

	Total		*White*		*Non-White*	
Attendant	*No.*	*%*	*No.*	*%*	*No.*	*%*
Total	**66,128**	**100.0**	**28,786**	**100.0**	**37,342**	**100.0**
Physician in hospital	29,276	44.3	23,064	80.1	6,212	16.6
Midwife	23,860	36.1	5,102	17.7	7,686	20.6
Physician in home	12,788	19.3	571	2.0	23,289	62.4
Other	204	0.3	49	0.2	155	0.4

There has been an increase in the number of hospital deliveries in recent years. On table 2 are shown the proportions of live births in hospitals from 1945 through 1949. In total births, there has been a steady increase from 32.3 per cent in 1945 to 44.3 in 1949. Among the whites, the increase was from 63.3 to 80.1 and among the non-whites from 8.1 to 16.6 in the five-year period. The plan in Mississippi for more hospitals, more adequately staffed, can be helpful in providing better services to mothers and infants.

Table 2. Percentage of live births in hospitals

Year	Total	White	Non-White
1949	44.3	80.1	16.6
1948	42.8	77.9	13.6
1947	41.7	73.8	11.0
1946	38.7	69.8	9.5
1945	32.3	63.3	8.1

The percentages of live births attended by physicians from 1945 to 1949 are shown on table 3. There was a slight increase from 1948 to 1949, but the total proportion (63.6 per cent) has not quite reached the peak of the year 1947. The varying composition of the births by race probably accounts for this difference, since there were larger numbers of white births in 1946 and 1947 in relation to the non-white births than in more recent years. The proportion of deliveries of non-whites by physicians has steadily increased during this five-year period from 28.6 per cent to 37.2. For whites, the proportion has increased from 96.5 to 97.8.

The proportion of hospital deliveries of non-white stillbirths has shown a consistent increase in the last 5 years (table 6), but there was a decrease in 1949 for whites which was reflected in a slight decrease in the proportion for total stillbirths.

Table 3. Percentage of live births attended by physicians

Year	Total	White	Non-White
1949	63.6	97.8	37.2
1948	63.0	97.6	34.2
1947	64.1	97.7	31.9
1946	62.5	97.3	30.0
1945	58.3	96.5	28.6

The age distribution of mothers on table 4 shows a similar distribution for both races. The non-white mothers were slightly younger than the whites but, for both races, about one-half were between 15 and 24 years and about a third were between 25 and 34 years. There were 431 mothers less than 15 years of age.

Table 4. Distribution of live births by age of mother

Age of Mother	*Total*	*White*	*Non-White*
Total	**66,128**	**28,786**	**37,342**
Under 15 years	431	42	389
15-24 years	34,212	14,166	20,046
25-34 years	23,394	11,260	12,134
35-44 years	7,564	3,185	4,379
45-54 years	145	57	88
55 years	2	0	2
Unknown	380	76	304

Stillbirths

There were 2,007 stillbirth certificates filed during the year, of which 1,965 were births to residents of Mississippi. Transcripts of stillbirths were not included because only a few were received.

Table 5 shows the distribution by race and attendant. Approximately three-fourths of the stillbirths were non-white. A larger proportion of these non-white stillbirths births were delivered in hospitals than of the non-white live births. This situation may arise because of under reporting of stillbirths at home or from the fact that midwives are encouraged to take difficult deliveries to a physician or a hospital. The sex ratio of still births was 1,356 males to 1,000 female—a higher ratio than was found for live births.

Table 5. Distribution of stillbirths by race and attendant

	Total		*White*		*Non-White*	
Attendant	*No.*	%	*No.*	%	*No.*	%
Total	**1,965**	**100.0**	**524**	**100.0**	**1,441**	**100.0**
Physician in hosp.	831	42.3	401	76.5	430	29.8
Physician in home	455	23.2	114	21.8	341	23.7
Widwife	669	34.0	7	1.3	662	45.9
Other	10	0.5	2	0.4	8	0.6

The proportion of hospital deliveries of non-white stillbirths has shown a consistent increase in the last 5 years (table 6), but there was a decrease in 1949 for whites which was reflected in a slight decrease in the proportion for total stillbirths.

	Total		*White*		*Non-White*	
Year	*No.*	%	*No.*	%	*No.*	%
1949	831	42.3	401	76.5	430	29.8
1948	835	42.4	448	79.7	387	27.5
1947	773	39.0	421	74.4	352	24.9
1946	748	37.4	465	74.0	283	20.7
1945	655	35.3	386	69.9	269	20.6

Resident Deaths

There were 20,489 deaths of residents of Mississippi during 1949, a slight increase over 1948. The crude death rate was 8.7 per 1,000 population, a slight increase over 1948. The rate for whites, 7.7, remained the same but the rate for non-whites increased from 9.6 to 9.8 in 1949. About 70% of the decendents were residents of rural areas, 67 per cent of the whites and 72 per cent of the non-whites.

On the basis of residence, the birth rate in 1949 exceeded the death rate by 19.4 per 1,000 population, exactly the same amount as in 1948. The excess for whites was 16.3 and for non-whites was 22.7.

Leading Causes of Death

The ten leading causes of death are listed on table 7 together with the number of deaths by race. These causes vary somewhat from the principal causes of previous years because of the new classification and new combinations of causes of death. Coding procedures now place upon the attending physician the primary responsibility for choosing the underlying cause of death, whereas, under the coding rules in use prior to January 1, 1949, selection was governed by the Manual of Joint Causes of Death. In addition, several specific conditions have been transferred to different categories in the new classification of Causes of Death. There are certain instances where these changes result in a break in the comparability of mortality statistics. Apparently, the greatest differences in the Mississippi data occur in nephritis, in heart diseases, in hypertensive diseases, in diseases of the arteries, in prematurity and in accidents, excluding motor vehicle accidents. Some of these can be directly traced to the new classification. For example, arteriolar nephrosclerosis has been transferred from nephritis either to heart disease or to hypertensive disease, depending upon mention of a heart condition; immaturity has been designated as a subsidiary cause to other infant diseases, etc.

Table 7. Ten leading causes of death

	Number of Deaths		
Cause	*Total*	*White*	*Non-White*
1. Heart disease	5,496	3,060	2,436
2. Vascular lesions	2,093	976	1,117
3. Malignant neoplasms	2,039	1,205	834
4. Certain diseases of early infancy	1,199		626
5. All accidents	1,177	561	616
6. Nephritis	729	236	493
7. Pneumonia	605	233	372
8. Tuberculosis	581	190	391
9. Homicide	359	62	297
10. Arteriosclerosis	242	158	84

The ten leading causes of death for 1949 include generally the same causes that were shown for 1948, although the order of several has been changed. Heart disease was in first place for both races, with approximately 27 per cent of the total deaths assigned to these conditions. Vascular lesions of the central nervous system were the second principal cause, comprising about 10 per cent, and malignant neoplasms ranked third. Certain diseases of early infancy caused almost 6 per cent of the total deaths; and accidents, in fifth place, caused 5.7 per cent of all deaths. Nephritis, pneumonia, tuberculosis, homicide and arteriosclerosis were the next leading causes. These 10 principal causes were assigned to 70.9 per cent of the total deaths.

The major cardiovascular-renal diseases (consisting of vascular lesions of the central nervous system, rheumatic fever, heart diseases, hypertension, arteriosclerosis and other diseases of the circulatory system, chronic and unspecified nephritis and other renal sclerosis) caused 8,758 deaths in 1949 (42.7 per cent of the total).

By race, the same 10 causes were the principal ones, except that, among the whites, congenital malformations replaced homicide, and among the non-whites influenza replaced arteriosclerosis.

The 5 leading causes of death in 6 age groups are worthy of study. There were many differences in the causes and their order in various age groups. Accidental deaths were included in every group except under one year and were the leading cause in the groups 1-4 years, 5-14 years and 15-34 years. Malignant neoplasms, including leukemia, were listed in four of the six groups and heart diseases were in all except the two youngest groups. Tuberculosis appeared in two of the groups: 15-34 years and 35-54 years. Maternal deaths and homicide were leading causes only in the 15-34 year group. Vascular lesions were in the two oldest groups.

The large number of deaths in Mississippi to which no specific cause can be assigned results in an unfortunate situation. This so-called ill-defined group, if included, would be one of the 5 principal causes in every age group except 15-34 years and would be exceeded only by heart disease in the total deaths. If these ill-defined deaths could be properly assigned, the principal causes and their order might be changed in every age group. In 1949, there were 2,363 deaths classified to ill-defined or unknown causes, an additional 246 to senility, and 554 to ill-defined diseases of early infancy. Altogether there were 3,163 deaths with unsatisfactory causes: 15.4 per cent of the total, 7.8 per cent of the white deaths and 21.7 per cent of the non-whites.

Woman's Auxiliary

WOMAN'S AUXILIARY TO THE SOUTHERN MEDICAL ASSOCIATION

Hotel Jefferson, St. Louis

November 13-16

Monday, November 13

10:00 a.m.—Registration.

Tuesday, November 14

8:00 a. m. — Executive Board Breakfast. (Missouri Breakfast).

10:00 a.m.—General Session.

Address of Welcome.

Response.

Recognition of Guests.

Reports of Officers.

In Memoriam.

2:00 p.m.—Fashion Show and Tea, honoring Mrs. Arthur A. Herold, National President.

7:00 p.m.—"Food, Fun and Frolic." Dinner and Entertainment with Southern Medical Association.

Wednesday, November 15

10:00 a.m.—General Session (continued).

Reports of Committees.

Reports of Councilors.

Election of Officers.

Business.

Installation of Officers.

1:00 p.m.—Luncheon—Dr. Seale Harris will review portion of his book "Woman's Surgeon."

Recognition of State Presidents and Councilors.

Guest Speakers: Dr. Elmer Henderson, President, American Medical Association; Mrs. Arthur A. Herold, President, Woman's Auxiliary to the American Medical Association.

Adjournment.

Come and help make this convention the biggest and best ever.

Saint Louis
CALLING
You
TO THE
SOUTHERN
MEDICAL
ASSOCIATION
MEETING
NOVEMBER
13 TO 16 1950

PHYSICIANS of the South have an urgent call to St. Louis for the annual meeting of the **Southern Medical Association**, Monday, Tuesday, Wednesday and Thursday, November 13-16. Medical meetings are essential in times of war as well as in times of peace. In the light of the world situation today this meeting of the Southern Medical Association may be the last complete general medical meeting to be held for some time to come. With this thought in mind, it is very important that all physicians take advantage of this opportunity to bring themselves up to date on the latest developments in the profession.

THE ST. LOUIS meeting will be one of the most complete medical meetings ever offered to the profession. Every phase of medicine and surgery will be covered in the general clinical sessions, the twenty-one sections, the five conjoint meetings and the scientific and technical exhibits.

REGARDLESS of what any physician may be interested in, regardless of how general or how limited his interest, there will be at St. Louis a program to challenge that interest and make it worthwhile for him to attend.

MEMBERS of state and county medical societies may attend. Eligible physicians, members of state and county medical societies in the South can be and should be members of the Southern Medical Association. The annual dues of $8.00 include the Southern Medical Journal, a journal valuable to physicians of the South, one that each should have on his reading table.

SOUTHERN MEDICAL ASSOCIATION
Empire Building
BIRMINGHAM 3, ALABAMA

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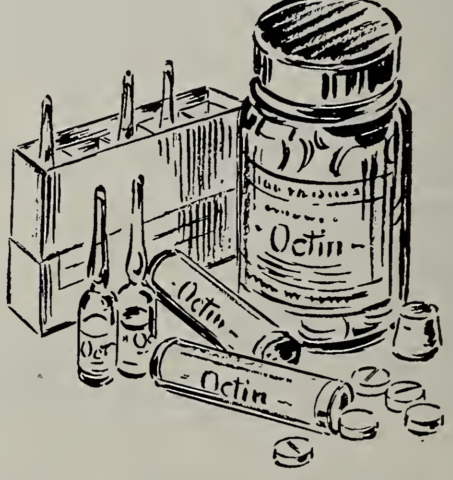
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The Clinical Significance of Hematuria*

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Cleveland, Ohio

HEMATURIA is one of the more frequent symptoms of disease of the urinary tract.

The presence of blood in the urine should not be considered as a clinical entity for which treatment is instituted, but rather a symptom which requires immediate investigation; only in this manner can a correct diagnosis be established early in the course of the disease. Usually the bleeding is not sufficient to produce exsanguination such as may occur in a bleeding ulcer of the duodenum, and the patient may not be alarmed as the bleeding is unaccompanied by other symptoms.

Unfortunately the bleeding is usually intermittent in character and when it ceases spontaneously a false sense of security is established. The patient then minimizes the gravity of the occurrence, assumes he is well, and, because his general health seems unimpaired, appears justified in such presumptions.

To the physician, the cessation of bleeding is not an indication that its significance can be disregarded or its importance lessened, and a complete urologic survey should be instituted immediately.

Unfortunately in many instances the physician and patient underestimate the importance of blood in the urine (unless profuse), and when an acute diagnosis is established, finally, a surgical cure may no longer be possible and irreparable damage may result.

Kretschmer, in a review of 933 cases of hematuria, stated that the average duration of bleeding, or the average time that elapsed between the initial attack and the time of diagnosis, was 2.39 years. This estimation compares with the duration of 2.59 years averaged in 1600 cases I reviewed a few years ago.

Hematuria is the presenting symptom in 73.5 per cent of patients with carcinoma of the bladder. In spite of this striking symptom, a diagnosis is established by cystoscopic examination in only 10.8 per cent within 1 month, 32.1 per cent within 5½ months, and 51.7 per cent within 1 year. Therefore, in 48.3 per cent of the patients observed, a cystoscopic survey was not performed until more than 1 year had elapsed from the onset of hematuria. It is thus evident that in many patients cystoscopic study is not recommended by the physician and the gravity of the presence of blood in the urine is depreciated and therefore disregarded.

Herman, in a review of 150 cases of diseases of the kidney, stated that hematuria was present in 43.3 per cent.

Kretschmer in a review of 860 cases of hematuria, stated that in 235, or 76.5 per cent of 307 cases in which hematuria was associated with a lesion of the bladder, the causative factor was either a papilloma or carcinoma. In 96 per cent of the 860 cases, the hematuria was associated with lesions within the genito-urinary tract.

MacKenzie, in 1932, studied 2240 cases of hematuria admitted to the Department of Urology at the Royal Victoria Hospital. The sources of the bleeding were as follows: kidney 41.38 per cent; ureter 12.23 per cent; bladder 20.8 per cent; urethra 5.5 per cent, and unclassified 2.14 per cent. He stated that, of the 2240 cases treated, approximately 75 per cent were due to one or more of these conditions.

Dr. N. Rathbun, in a review of 1500 admissions to the Urological Service at the Brooklyn Hospital, found hematuria the outstanding symptom in 13.5 per cent. He concluded: "If we could impress upon every man practicing medicine the fact that in 50 per cent of all cases hematuria is produced by a tumor, and that a large majority of these cases are malignant, we would do more to reduce our cancer mortality and morbidity than can possibly be done in any other way."

Cahill stated that close to 40 per cent of the patients with hematuria admitted to the J. Bentley Squire Urological Clinic had neoplasms involving some part of the urinary tract. In a series of 798 cases reviewed at the clinic in 1924, hematuria was due to a new growth in the urinary tract in 32 per cent.

The significance of the detection of red blood cells in the urine on microscopic examination, must not be passed over lightly. An

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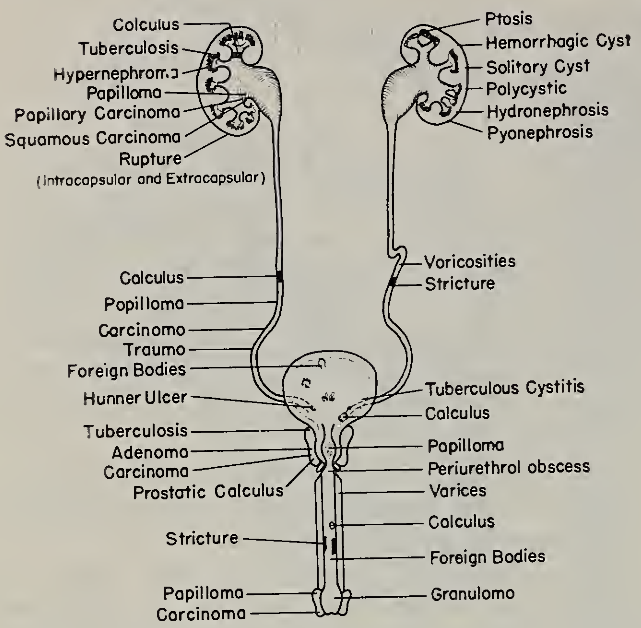
*Read before the sixty-first annual session of the Mid-South Postgraduate Medical Assembly, Memphis, Tenn., Feb. 14-17, 1950.

*From the Cleveland Clinic and the Frank E. Bunts Educational Institute.


Colculus
Tuberculosis
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Addis count should be made in suspected cases of nephritis or pyelonephritis. The detection (microscopic) of red cells in repeatedly voided specimens requires complete investigation of the urinary tract. The presence of these cells may denote as grave a pathologic lesion as that associated with gross hematuria.

Classification

1. Hematuria in general disease
    - A. Acute fevers: tonsillitis, scarlet fever, rheumatic fever, etc.
    - B. Chronic infections
    - C. Blood dyscrasias: purpura, leukemia, polycythemia vera, abnormal capillary fragility, hereditary telangiectasia
    - D. Deficiency and dietary diseases: scurvy, liver deficiency
    - E. Diseases of unknown etiology: Hodgkin's disease, hypertension, arteriosclerosis with renal involvement, periarteritis nodosa
    - F. Effect of anticoagulants
2. Hematuria due to intrinsic disease of the urinary tract
    - Renal
        1. Calculi or crystals
        2. Nephritis
        3. Tumor: capsular, parenchymal, pelvic, metastatic lesions
        4. Infection, acute or chronic, including tuberculosis
        5. Anomalies, polycystic disease, horseshoe kidney, nephroptosis, etc.
        6. Trauma
    - B. Ureteral
        1. Calculi
        2. Infection
        3. Stricture
        4. Tumor
    - C. Vesical
        1. Tumor
        2. Infection
        3. Calculi or foreign bodies
        4. Ulcer
        5. Trauma
    - D. Bladder neck
        1. Tumor
        2. Varicosities
        3. Prostate, including seminal vesicles: hyperplasia; carcinoma
    - E. Urethral
        1. Infection
        2. Stricture
        3. Tumor
        4. Consequence of instrumentation
3. Hematuria associated with extra-urinary pathology
    - A. Acute appendicitis
    - B. Diverticulosis of the colon
    - C. Neoplasm of the colon, rectum or pelvic structures
    - D. Acute or chronic salpingitis

This classification is by no means exhaustive. The tabulation illustrates the extensive and comprehensive investigation which may be required to determine the causative factor instrumental in producing blood in the urine. A carefully elicited history is of the utmost importance. What type of hematuria is present? Is it initial in type? If so, the bleeding is generally from the anterior urethra. The patient is usually aware that a few drops of unaltered blood have escaped from the urethra at the start of micturition. Terminal hematuria arises from the posterior urethra or bladder. Complete or total hematuria, which occurs when the blood and urine are well mixed, usually originates in the kidneys, bladder, or ureters. If the bleeding is associated with an interruption of the urinary stream it suggests the presence of a tumor of the bladder neck or blood clots.

The patients may volunteer the information that smoky urine developed shortly after a sore throat and the ankles showed slight swelling. Both symptoms indicate a possible diagnosis of nephritis.

A past history of pulmonary tuberculosis with sanatorium care suggests investigation for renal tuberculosis.

More than one member of the patient's immediate family or more distant relatives may have died of renal disease, implying the possibility of congenital polycystic kidneys. Other diseases such as scurvy or blood dyscrasias may be suspected from information volunteered by the patient.

The physical examination may reveal the presence of edema, hypertension, an enlarged spleen, bilateral or unilateral renal masses, or other evidence of disease. The vaginal or rectal examination may disclose the presence of a malignant lesion which explains the source of the blood in the urine.

The cystoscopic examination, pyelography and complete laboratory studies usually suffice to establish an accurate diagnosis. The diagnosis of essential hematuria should be made rarely, if ever, and usually is an admission of ignorance on the part of the diagnostician. If the first examination produces negative results, a repeat examination should be given within 3 months.

As indicated under "Classification," close cooperation between the internist and urologist is frequently required to render an accurate diagnosis and to institute appropriate therapy.

The following case reports are presented to emphasize the gravity of gross and microscopic hematuria, to illustrate the inadequacy of the history alone in establishing the diagnosis, and to stress the similarity of symptoms which may exist in benign, malignant, and grave lesions of the urinary tract.

Case Reports

Case 1. A man, 66 years of age, entered the Cleveland Clinic stating that, at varying intervals for the last year, he had observed a slight amount of blood in the urine. The bleeding, having persisted for a few days, stopped spontaneously. For 2 years he had been conscious of nocturia, decrease in force of the stream, and dribbling. The cystoscopic examination revealed a tumor on the left lateral wall of the bladder. The tumor biopsy was graded "papilloma" and the growth was removed by transurethral resection. The patient has been living for three years without evidence of recurrence or new tumor formation.

Case 2. The patient, a man 69 years of age, entered the clinic complaining of blood in the urine. The blood was mixed with the urine and the condition had been present for a period of 6 months. The bleeding was intermittent in character, never profuse, and of a few days' duration at each episode. Nocturia 2-3x, weakness of stream and force, and dribbling were present. The cystoscopic examination disclosed the presence of "prostatic varices." Further examination of these varices did not yield observations of importance. Since fulguration there has been no further bleeding.

Comment

The patients in cases 1 and 2 are in the same age group and the symptoms are practically identical. Without cystoscopic study an accurate diagnosis would have been impossible. Further delay in detecting the tumor of the bladder (case 1) would have rendered the case inoperable.

Case 3. A woman, 57 years of age, entered the clinic complaining of blood in the urine and high blood pressure. The blood in the urine, noticed 2 years previously, had lasted for only one day. One year later blood was detected again in the urine, unaccompanied by other urinary symptoms. Medicine was prescribed at that time and in two weeks the bleeding subsided. One week preceding our examination blood again appeared in the urine accompanied, at this time, by casts. A diagnosis of nephritis was made elsewhere. The patient then entered the clinic for examination.

The previous diagnosis of hypertension and nephritis was confirmed. In view of the hematuria, a cystoscopic study was made which revealed the presence of a large, papillomatous growth in the region of the left ureteral orifice. This growth was fulgurated and radon seeds were placed in the base of the tumor. The pathologic diagnosis was papillary carcinoma of the bladder, grade 1. A new tumor developed one year later and fulguration was again employed. During the last three years there has been no recurrence of new tumors.

In this case slight bleeding had occurred two years previously and, due to the hypertension and casts in the urine, a diagnosis of nephritis had been made. When, however, a cystoscopic examination was performed, the correct diagnosis was found to be carcinoma of the bladder, as well as hypertension and nephritis.

Case 4. A woman, 56 years of age, entered the clinic complaining of blood in the urine. The first attack of mild hematuria had been noted 18 months previously. Medicine was prescribed and the bleeding stopped within 5 days. Four months later she again observed blood in the urine on one occasion. There was no further instance of bleeding until six weeks before admission.

Complete urologic examination revealed a tumor of the left kidney. A nephrectomy was performed and the pathologic diagnosis was carcinoma of the kidney. In this instance, if a cystoscopic examination had been performed 18 months before operation, the outcome would have been more favorable. Early diagnosis is essential in the management of renal tumors.

Case 5. A woman, 29 years of age, entered the clinic complaining of blood in the urine. This had been observed for the first time two years previously, and was not accompanied by other urinary symptoms; the bleeding had continued for one month and then subsided. One year later blood was again noted in the urine and, in this instance, persisted for two months. Bleeding had been present for three weeks preceding our examination and was the only symptom. Urologic investigation established the diagnosis of tuberculosis of the left kidney, and nephrectomy was performed. In this patient the absence of urinary symptoms, aside from hematuria, was suggestive of a renal neoplasm. She was cured by nephrectomy.

Conclusion

1. Hematuria is not a disease nor a clinical entity. It is a grave symptom requiring complete urologic examination.

2. In a series of 798 consecutive cases of hematuria reported in 1924, the disease was found to be due to a growth in the urinary tract in 32 per cent. In 59 per cent of the cases, the patient suffered from tumor, tuberculosis or calculus disease.

3. When the significance of gross or microscopic amounts of blood in the urine is minimized, the possibility of early diagnosis is often precluded.

4. The physician assumes the obligation and the responsibility of proving beyond a doubt that a serious lesion does exist in the urinary tract.

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Intra-Arterial Transfusion

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The purpose of this paper is to re-emphasize the importance of this procedure and to present two cases in whom we feel that arterial transfusion made possible definitive surgery which ultimately saved the patient's life. Many articles have appeared in the literature during the past few years which cite numerous cases in which the patients were believed to have been saved by intra-arterial transfusions.

In 1943 Kohlstaedt and Page reported a series of experiments on the effectiveness of intra-arterial and intra-venous transfusions in hemorrhagic shock.[1] They found that recovery with intra-arterial transfusions was as high as 75 per cent, while with intra-venous transfusions only 25 per cent. Later, Robertson[2] and his group in similar experiments reported that adequate results were obtained from intra-arterial transfusions four times as rapidly as with intra-venous transfusions.

Along with these articles elaborate apparatus have appeared which seem to be necessary to give such a transfusion. The basic principle behind an intra-arterial transfusion is the pressure within the transfusing apparatus must be greater than the pressure within the arterial system. As the pressure within the arterial system rises, the pressure within the transfusing apparatus must be increased.

Those of us who have seen many patients admitted to the hospital in shock have often wanted to use arterial transfusions, but have declined to do so because of the lack of the described apparatus. Although this equipment may be the desired way of giving arterial transfusions, it is certainly not the only way. Three-way stop-cocks are readily available at any central supply. They can be connected to the ordinary transfusion set and blood can be pumped into the cannulated artery, usually the radial artery, by means of a 20 to 50 cc. syringe. Another simple means of giving arterial transfusions is by connecting the bulb of a sphygmomanometer to the flask that contains the blood. This can be done by using a rubber stopper with a glass connection. Pressure upon the bulb will cause a positive pressure within the flask containing the blood, and thereby force the blood into the arterial system.

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The physiological basis of the efficiency of intra-arterial transfusion has been worked out from a series of experiments by Holden and his group at Western Reserve.[3] It is common knowledge that in shock there is a constriction of peripheral and coronary vessels. If the pressure near the aortic arch or carotid body sinus is suddenly elevated, there is a relaxation of this constriction. This will cause an increase of blood flow to the heart muscle itself and therefore a more forceful ventricular beat will result.

In a series of experiments Holden and his group have injected a solution of Diodrast into the femoral artery of dogs in profound shock.[3]. The more profound the shock, the further up the aortic arch or carotid body the Diodrast traveled. As was recorded by a mamometer attached to the carotid artery, there was also a corresponding rise in blood pressure.

Case Report: M. V., a 34-year-old colored female, was admitted to the John Gaston Hospital in profound shock. Her pulse and blood pressure were unobtainable. The patient's history was of three days' duration. At the onset she complained of lower abdominal pains which were soon followed by irregular uterine bleeding. The pain was not associated with nausea and vomiting or bowel movements. This pain persisted for 48 hours only increasing slightly in severity. Approximately 8 hours before admission the pain became suddenly more intense and the patient complained of dizziness and felt as though she would faint. Shortly before the admission the patient became unconscious.

Soon after admission, plasma was started by leg veins and the patient was typed and crossmatched with blood. After receiving the plasma, her pulse and blood pressure were still unobtainable. The patient was immediately carried to the operating room and an arterial transfusion started in the right radial artery using a three-way stop-cock and a 50 cc. syringe connected to the usual transfusion set.

In ten minutes 500 cc. of blood had been given and the first blood pressure reading was attempted after starting the arterial transfusion. Her blood pressure was then 110/80. Surgery was started and a slower, more constant rate of transfusing was started. A ruptured ectopic pregnancy causing the abdominal cavity to be filled with blood was found.

In all, 1500 cc. of blood were given by the arterial method to maintain an adequate blood pressure during surgery. The arterial transfusion was discontinued after completion of the surgery, and a venous transfusion was started. The patient made an uneventful postoperative recovery.

Case Report: J. S., a 26-year-old colored male was admitted to the John Gaston Hospital following a shotgun wound over the right femoral triangle. No pulse could be ascertained over the right dorsalis pedis artery nor could the patient move his right leg. His condition was fairly good with a blood pressure reading of 90/60. A plasma venous transfusion was started and the patient's pressure rose to 120/80. Shortly following this, blood began to flow profusely from the leg wound and the patient went into deep shock. It was necessary to apply pressure over the femoral artery to control bleeding. A venous transfusion of blood was given without appreciable change in the blood pressure.

The patient was immediately carried to the operating room and an arterial transfusion was started in the left radial artery using a three-way stop-cock attached to an ordinary transfusion set. Eight minutes after starting the transfusion and after 500 cc. of blood had been given, the patient's blood pressure rose to 104/70. Surgery was started immediately. The femoral artery and vein had been completely severed. It was necessary to make a wide excision of all devitalized tissue and to ligate the femoral vessels proximal and distal to the wound. A transfusion of 1500 cc. of blood was given by the arterial route. As soon as surgery was completed the intra-venous method of giving blood and fluid was used.

The patient recovered from the surgery, but it was necessary afterwards to amputate his leg.

Summary and Conclusions

Every patient admitted to the hospital in shock does not need an arterial transfusion. This procedure should be reserved for those patients in shock from acute blood loss. Many dangers have been encountered following such a procedure. The usual procedure following an admission of a shock patient from acute blood loss to the hospital, is the starting of plasma venous transfusion. This is usually followed by blood as soon as blood is available. This sometimes takes one to two hours only to find that the patient is still in deep shock. The decision then should be made to start an arterial transfusion, and valuable time could have been saved if these patients in deep profound shock were given an arterial transfusion as soon as blood is available, without attempting a venous transfusion. Surgery can be started from eight to fifteen minutes after starting the arterial transfusion, whereas hours will pass before surgery can be started following venous transfusions.

One should not hesitate to use this life saving procedure after a venous transfusion fails to elevate the blood pressure sufficiently. One also should keep in mind that very active bleeding must be controlled as soon as possible and this cannot be compensated by venous transfusions, and delay should be limited before starting an arterial transfusion.

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Mediastinal Tumors and Cysts*

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MEDIASTINAL tumors and cysts once considered as rare, are now being diagnosed and reported more frequently with the practice of routine radiologic surveys such as were performed in the services, and are generally instituted in industry, educational systems, and public health programs.

Blades reported 109 cases of mediastinal tumors exclusive of those of lymphatic origin, which were operated upon in army thoracic surgical centers during a three year period during the late war. Significantly of these 109 cases, 94 were asymptomatic, stressing the point that with the relative safety of present-day exploration of the chest, the practice of watchful waiting is to be thoroughly condemned.

Of the most common types of tumors, exclusive of the lymphomas, the most numerous cases reported from the literature of neurogenic tumors numbered 135 and were reported by Blades. Dermoids and teratomas are among the most frequent types, and the largest number reported from the literature being by Rusby in 1944, who reported 251 cases. In 1917 Hertzler reported one case of his own and found 76 in literature. The first case was reported in 1825 by Gordon, found at autopsy. Heuer and Andrus found 230 malignant tumors of the thymus in the literature up to 1940.

Mediastinal tumors arising as they do from a large number of structures in a closely knit space are difficult to classify. A workable classification as given by Graham and Blades seems sufficient:

a) tumors of the thyroid
b) tumors of the thymus and hyperplasia
c) tumors of the nerve tissue
    neurofibroma
    sympathicoblastoma
    hour glass tumors
d) lipoma, fibroma, chondra, and myxoma
e) tumors of the trachea and esophagus
f) tumors of the lymph nodes
    1) acute inflammation; tuberculosis
    2) Hodgkin's, leukemia, aleukemia, lymposarcoma
    3) metastatic tumor
g) cystic tumors
    1) dermoids
    2) teratomas
    3) bronchial cysts
h) vascular tumors, aneurysm of the aorta, aneurysm of the heart
i) tumors of the heart and pericardium

For the sake of convenience these tumors are usually classified as anterior mediastinal tumors and posterior mediastinal tumors. The most frequent type anteriorly is that group of lymphatic origin, while the most frequent type of the anterior group from the surgical standpoint are the dermoid cysts and teratomas. Blades reported 233 cases of dermoids and teratomas, and only three were in the posterior mediastinum. Of the posterior mediastinal tumors the most frequent are the neurogenic tumors.

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*Read before the Section on Surgery at the eighty-second annual session of the Mississippi State Medical Association, Biloxi, Miss., May 9-11, 1950.

Approximately 25 per cent of all reported cases of mediastinal tumors are malignant. Of the some 300 cases of dermoid cysts reported, about 13 per cent were malignant. Neurogenic tumors are reported as being malignant in from 10 to 46 per cent, averaging about 33 per cent.

The symptoms of mediastinal tumors may be entirely absent. The most frequent symptom in all types is **dyspnea,** which apparently is due to compression of the large veins of the mediastinum, particularly the superior vena cava, rather than to tracheal compression. Other general symptoms are those of pain, cough and cyanosis. Symptoms of compression of the mediastinum with dyspnea and cough come late with neurogenic tumors. They characteristically give rise to localizing signs involving the sensory portions of the intercostal nerves with pain along the distribution of the involved nerves, or when originating in the ganglia, particularly the stellate ganglia may exhibit Horner's syndrome. Likewise with dermoid tumors, there may occasionally be expectoration of hair. There is a great deal of difference of opinion as to whether myasthenia gravis is an indication of thymic tumor. In a recent report by Eaton and Clagett it was indicated that the treatment of myasthenia gravis by thymectomy was unsuccessful. They advise thymectomy only when an operable thymic tumor can be diagnosed radiologically. Bronchogenic cysts and dermoids may exhibit recurrent bronchial compression and atelectasis, due to involvement of the bronchial tree. In most instances lymphomas will be seen bilaterally.

The most important aid is the roentgenogram, particularly when made in different planes. For more accurate localization these may be supplemented by fluoroscopy, bronchoscopy and bronchography. Angiocardiography may be used to rule out aneurysm. As previously stated anterior tumors are most likely to be lymphomas, dermoids or teratomas, while posterior shadows may possibly indicate neurofibroma or neurofibrosarcoma. Large bilateral lesions frequently indicate metastatic malignancy from perhaps the breast or thyroid gland. Many cases will still be incompletely diagnosed until thoracotomy is performed. Aspiration of tumors near the surface is mentioned only to be condemned.

The treatment of mediastinal tumors is generally surgical. With the exception of the anterior mediastinal tumors of lymphatic origin, they should all be explored. The lymphatic tumors of neoplastic origin should be given a course in radiation therapy, bearing in mind that it is often necessary to wait a period of one month for response. If at the end of that time no response is noted, these should be explored surgically.

Ideally these tumors should be diagnosed and thoracotomy performed before symptoms appear. It is known that with the onset of symptoms, growth with spread has occurred, and the increasing probability of malignant change. Whereas nearly all of these tumors may be completely removed before they become malignant, practically none may be completely removed after malignancy develops. In fact, Graham states that he knows of no five-year cures of malignant mediastinal tumors other than an occasional case of Hodgkin's disease treated radiologically. The surgical approach is determined by the location as well as the size of the tumor. Small tumors may be removed without rib resection, even larger ones may be removed by division of one or more costal cartilages anteriorly with suture immobilization of the divided cartilage afterward. For larger tumors, rib resection may be necessary.

In the case of dermoid cysts it is considered much better to remove the entire tumor, even though some segments of lung may be sacrificed than to marsupialize them as was frequently done in the past. Laminectomy may be necessary to remove the intravertebral portion of hour-glass neurofibromas.

As in all cases of chest surgery, the patient must be in good condition. The use of whole blood transfusions, antibiotics, vitamins and care of the tracheobronchial tree in the preoperative, operative and postoperative periods are prerequisites. The value of the trained anaesthesiologist is inestimable.

During the past year we have had 14 cases of mediastinal tumors, which have been explored. Of these, five were mediastinal thyroids, four of which were posterior mediastinal in position, two were metastatic lesions to the anteriormediastinal glands, and there was one each of teratoma (chorionepithelioma), dermoid cyst, bronchogenic cyst, neurofibrosarcoma, aneurysm of the innominate artery, one foreign body and one tuberculoma.

Several cases are shown as being typical of the various types. The thyroid cases represent the entire descent of the thyroid adenomas from the neck to the diaphragm.

Case Report: (Teratoma, Chorionepithelioma)

A 22-year-old colored male was admitted to Mississippi Baptist Hospital on May 27, 1949, with a history of pain in left chest of about six weeks' duration. There was also a light productive cough and low grade fever, 99 degrees to 100 degrees. On physical examination there was marked dullness in the left lateral lung fields. There was a loud rumbling presystolic murmur. He was at first thought to be suffering from rheumatic heart disease. Roentgenograms of the chest revealed a large tumor mass arising from the anterior mediastinum and extending into the lung fields. (Fig. 1). On June 8, 1949, the chest was explored through a left posterolateral incision with resection of a segment of fifth and sixth ribs paravertebrally. The large necrotic-appearing tumor of the anterior mediastinum was seen to invade the left upper lobe and pericardium. Biopsy was obtained since the tumor was not removable. Postoperatively the patient was given x-ray therapy. He has not been heard from in the last four months.

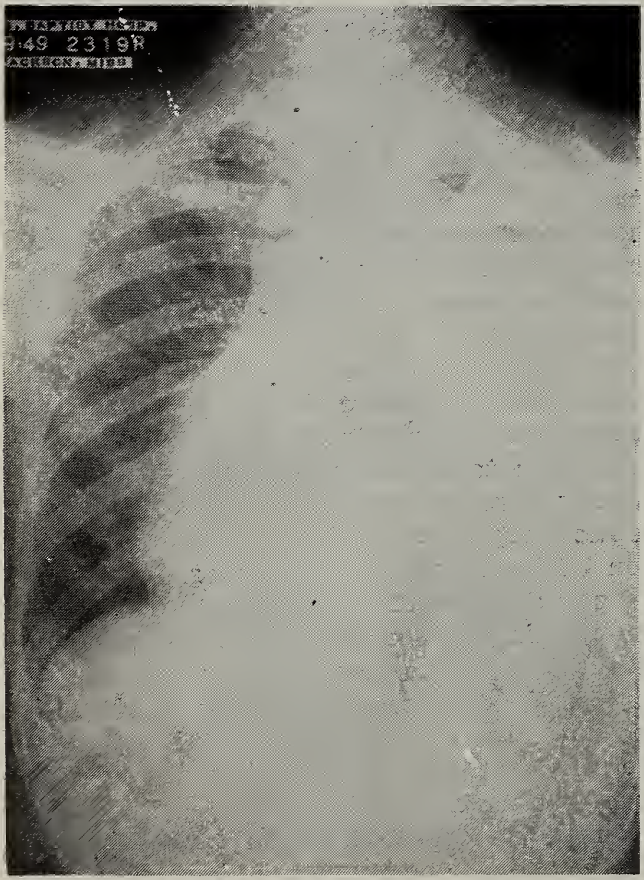

Figure 1. Chorionepithelioma of Mediastinum occurring in 22-year-old colored male. Previously thought to have rheumatic heart disease.

Case Report: (Dermoid Cyst)

Mrs. C. B., a 23-year-old housewife was admitted to Mississippi Baptist Hospital on April 14, 1940. A routine photo x-ray was made three years previously at which time a growth in the chest was noted. She was advised to watch the growth. There was a gradual increase in size. On admission she complained of pain in the left shoulder and apex of left chest. She had recurrent attacks of virus pneumonitis; had occasionally spit up small amounts of blood. Physical examination was negative, except for dullness in the left apex anteriorly with impaired breath sounds. Fluoroscopy revealed a mass in the left lung field which seemed to be anterior. Roentgenograms (Fig. 2) with esophagography reveals the tumor mass in the left anterior chest. Sputum for acid-fast organisms was negative. The patient was operated on April 4, 1950, through a left posterolateral incision. The tumor, found to be a dermoid, was isolated with

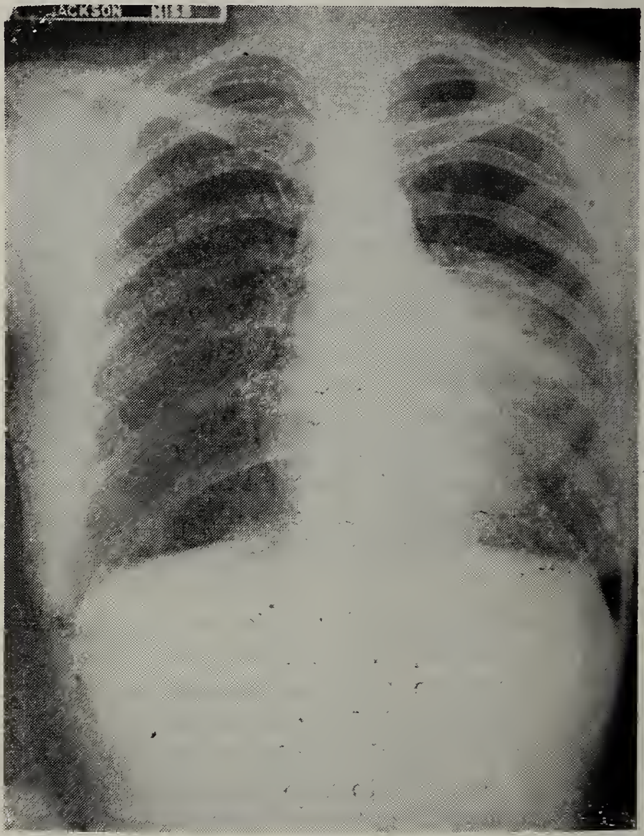

Figure 2. Dermoid cyst of mediastinum in 23-year-old housewife. Lesion revealed three years previously on chest photo survey.

difficulty because of adhesions. A segment of the lingula of the left lobe would not expand, and a segmental resection was done. The chest was closed with water seal drainage anteriorly and posteriorly. Postoperative course was uneventful and patient was discharged on April 12, 1950, after an uneventful recovery.

Case Report: (Mediastinal Goitre)

M. C., colored female, 45 years old, was admitted to Mississippi Baptist Hospital on May 21, 1949, with symptoms of smothering and choking and retrosternal discomfort for six years. Past history was significant in that she had a nodular goitre removed in June 1942, at which time an x-ray of the chest revealed the tumor and thoracotomy was advised but declined. The x-rays and fluoroscopy here revealed the tumor mass. (Fig. 3). On June 2, 1949, the thorax was opened through the bed of the fifth rib. A large tumor mass measuring 200x280x100mm. was found sitting on top of the diaphragm and filling both the posterior and anterior mediastinal divisions. The blood supply was from the mediastinum by a broad stalk; it was very abundant. The tumor mass was removed and proved to be a nodular goitre. The postoperative course was uneventful. The patient is now free of symptoms. We have had

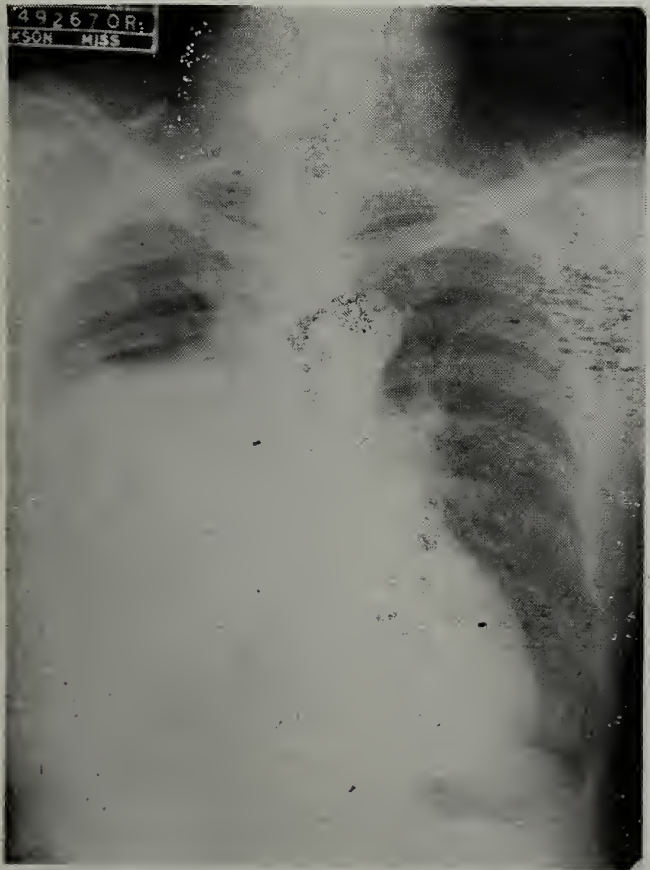

Figure 3. Intrathoracic thyroid occurring in 45-year-old colored female. Tumor measured 20 x 28 x 10 cm. and reposed on the diaphragm.

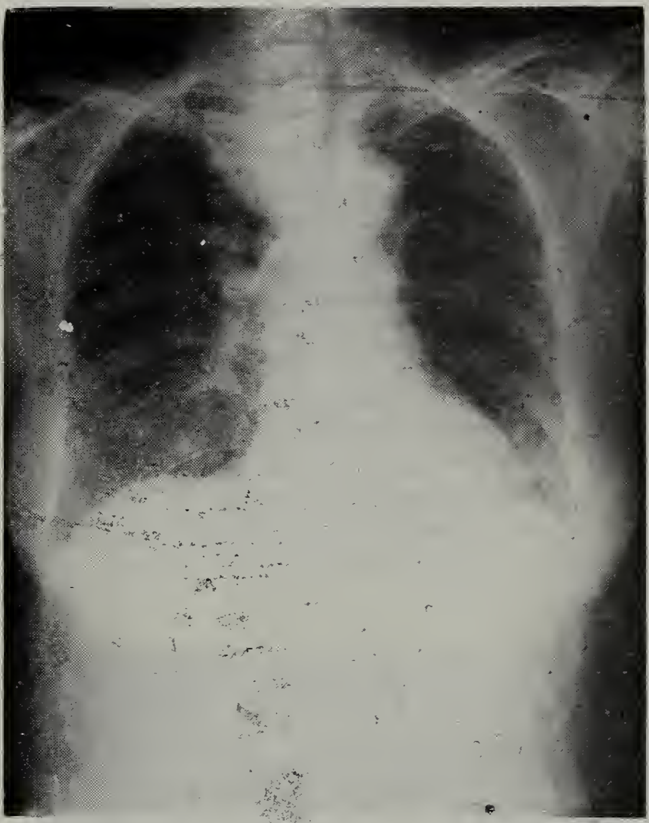

Figure 4. Calcified Mediastinal Thyroid occurring in posterior mediastinum at higher level.

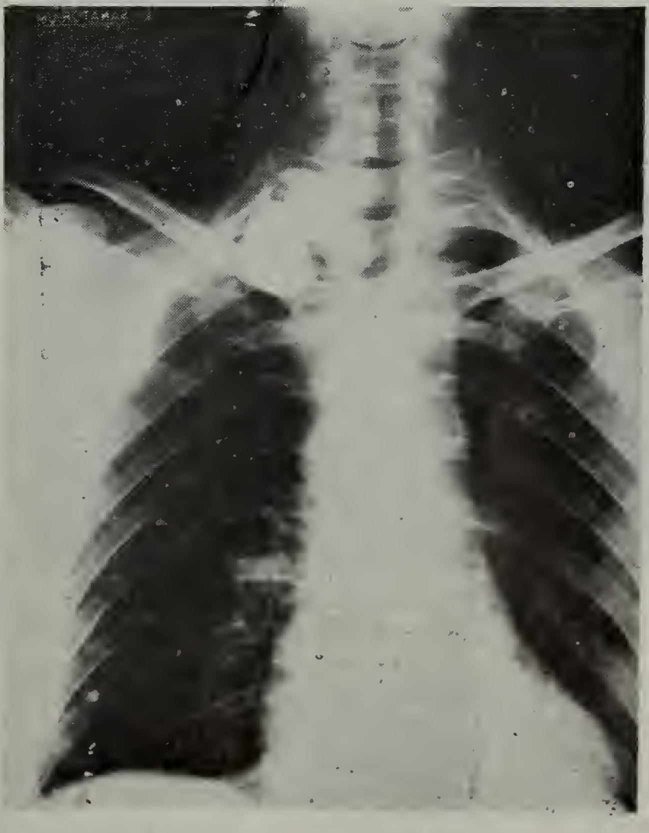

Figure 5. Mediastinal thyroid (Figures 4, 5, and 6 reveal descent through mediastinum).

three other mediastinal thyroids at all levels of descent, but this one is by far the largest and thus had descended farther. Figures 4 and 5 reveal other thyroids in the mediastinum depicting the descent from the neck to the diaphragm.

Case Report: (Neurofibrosarcoma)

J. C., a colored male, age 48, was admitted to Mississippi Charity Hospital on September 24, 1949, with a history of pain in chest radiating along the intercostals and originating in the dorsal region. The pain was similar to pleurisy. There was also some urinary retention. Duration of symptoms was about four months. X-rays of the chest in the AP and lateral views revealed a tumor mass apparently of the posterior mediastinum. It was difficult to differentiate from an aneurysm, and an angiocardiogram was made ruling out aneurysm. (Fig. 6).

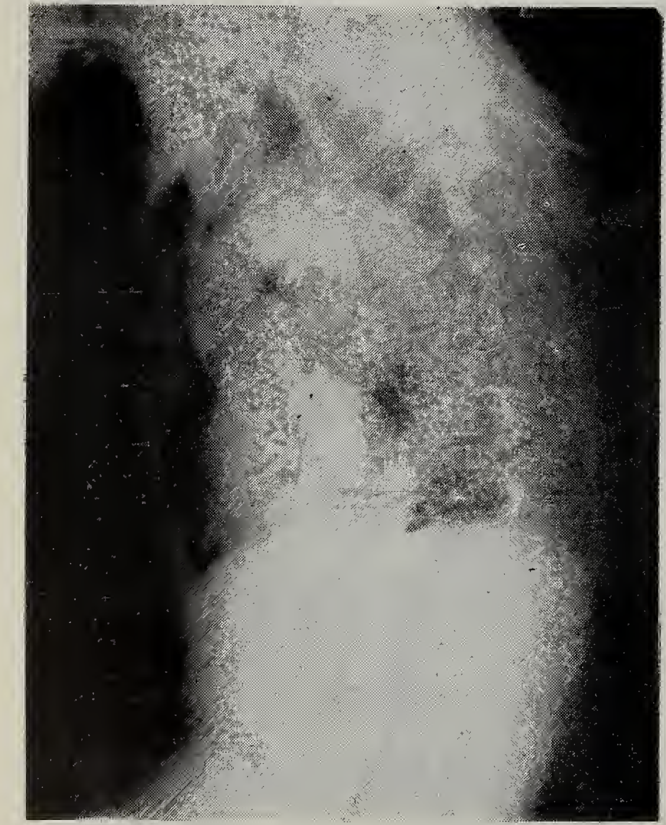

Figure 6. Neurofibrosarcoma occurring in 48-year-old colored male. Angiocardiogram rules out aneurysm of aorta.

While awaiting thoracic exploration the patient developed a paralysis of the lower extremities and was explored by the neurosurgeon, who found a neurofibrosarcoma. At autopsy the lesion in the chest was found also to be a neurofibroscoma. Fig. 9 merely shows a case resembling a neurofibroma of the mediastinum, which turned out to be a foreign body with surrounding fibrosis.

Case Report: J. L. D., ten weeks old white male infant, had presented increasing respiratory distress since birth. Initial resuscitation was quite difficult. Thereafter the patient coughed nonproductively more or less constantly. After spells of coughing or crying he became markedly cyanotic. Feeding was frequently interrupted by paroxysms of coughing with resultant cyanosis. Physical examination revealed a well-developed white male infant in obvious respiratory distress. Respirations varied from 36 to 44 and were shallow. The left chest seemed larger than the right, was hyperresonant and presented decreased breath sounds. Repeated x-ray studies showed the heart and mediastinal structures to be markedly displaced to the right with compression of this lung and emphysema of the left. (Fig. 7)

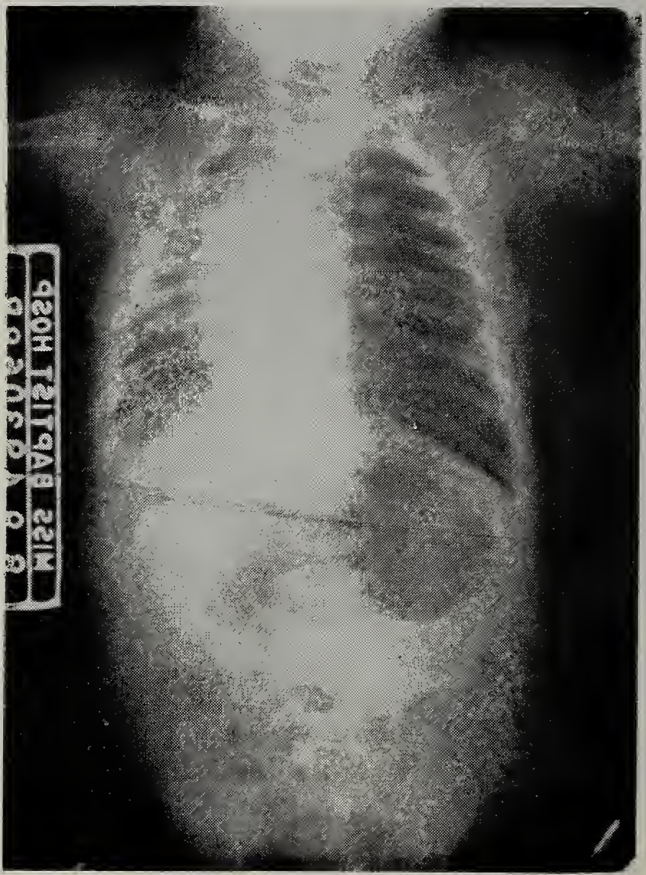

Figure 7. Bronchogenic cyst occurring in 10-week-old white infant, causing obstruction from external pressure of left main stem bronchus and causing emphysema of left lung with mediastinum shifted markedly to right.

The radiologic impression was obstructive emphysema due to obstruction of the left main stem bronchus. Lipiodol esophagram revealed a filling defect in the midportion of the esophagus just below the bifurcation of the trachea, which was not constant on the films. The child had been bronchoscoped on three different occasions with essentially negative findings except for an apparent extrinsic constriction of the left main stem bronchus. There was no evidence of intra- or endobronchial obstruction.

As the child's respiratory status was slowly growing worse, exploratory thoracotomy with a preoperative diagnosis of pulmonary cyst or obstructive emphysema secondary to an enlarged hilar node or aberrant blood vessel was made. Exploratory thoracotomy under endotracheal anesthesia was done through a left posterolateral incision overlying the sixth interspace. As the pleura was opened the underlying emphysematous lung failed to collapse but herniated into the wound, much as does the intestine in an unrelaxed patient. We were unable to collapse the left lung with gentle manual compression. A thin-walled cyst about the size of a lemon was found in the posterior mediastinum just below the bifurcation of the trachea. (Fig. 8) This cyst was producing a check-valve type of obstruction of the left main stem bronchus so that inspired air could enter the lung as the tracheobronchial tree relaxed with inspiration but was unable to leave the lung during expiration. As soon as the liquid contents of the cyst were aspirated the lung began to have normal respiratory excursions. The cyst wall was then removed with relative ease and the chest closed in layers with one catheter which was connected to a water trap. Postoperative convalescence was surprisingly smooth. Respiratory function seemed clinically normal at the time of discharge from the hospital. X-ray six weeks after operation reveals only slight shift of the mediastinum. The child is clinically well.

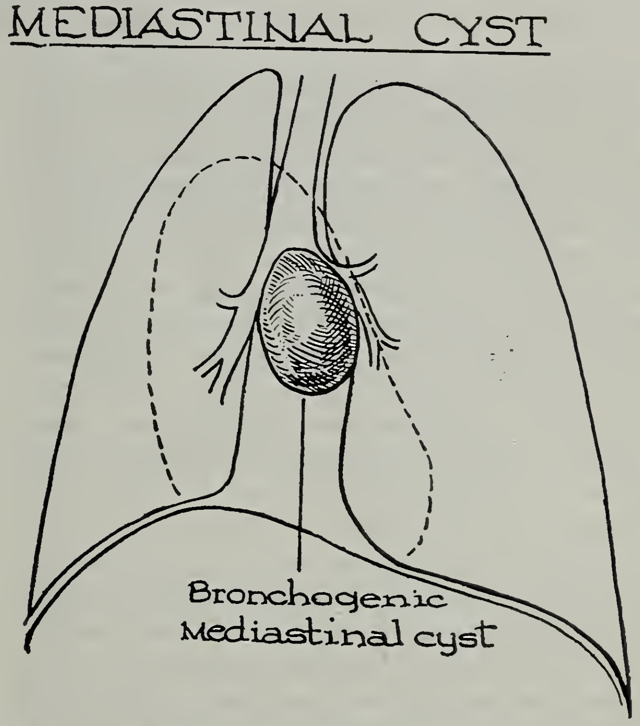

Figure 8. Diagram of bronchogenic cyst showing position and obstruction of left main stem bronchus.

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ECONOMIC IDIOCY

We seem to be doing our best here in the United States of America to destroy the economy that makes us strong.

ONE: Including the current fiscal year, our government has spent more than it has taken in during nineteen of the last twenty-one years.

TWO: During two world wars the United States has served as the source of wealth and resources to finance the preservation of democracy. This has resulted in a national debt that now amounts to 40 per cent more than the total assessed value of all the taxable property in this nation.

THREE: One of the surest ways to destroy a nation is to debase its currency. This has been recognized for centuries by students of government, and has been particularly pointed out by the communist advocates of world revolution in recent years. We have had a debased currency since 1933.

FOUR: Now we are beginning to undermine the main support that has preserved our economy during these recent years—the incentive to produce. We are killing the incentive to produce with higher taxation and with governmental controls of materials and prices.

We may reach the time more quickly than we think when the problem

Gynecological Nursing*

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Late concepts, or ideas, of nursing care have paralleled the trend in late or modern methods of treatment. Closer approach to the normal physiological processes of the body has been the aim of the last few years. The internist, the surgeon, and the nursing profession have been striving to gain primarily better and better results in their work, in the treating, operating and nursing techniques. The results have not been slow in coming—though the task has been a hard one, hampered by tradition, impeded by prejudice and ignorance—which always stand in the way of advance in our hospital work.

Nursing care cannot be easily delineated from pre- or postoperative gynecological care. The nursing care, the ward or room observation of the surgical patient is probably as important as the surgical procedure itself. What good is there obtained from a neat necessary, surgical procedure if neglect postoperatively results in a complication, far worse than that which the patient presented herself to us for treatment? An example would be a lung abscess resulting from aspirated vomitus following a simple abdominal or vaginal procedure. Certainly I would rather see a patient keep her fibroids than develop a lung abscess—yet this does occur.

To be a little more specific I will discuss preoperative, operative and postoperative nursing problems in relation to late trends in gynecological work.

Preoperatively the care of the female patient preparing for surgery is important, because the chance that patient has for a successful operation and postoperative course, with cure, is certainly enhanced by adequate mental and physiological preparation. Our aim as doctors and nurses is to reduce the patient's anxiety to a minimum by having her fully aware of what her operation is to consist of, explain ahead of time what is to be done, what the consequences are, and give her some idea of what an operating room is like and what the movements of each person in the operating room will be. The nurse who first approaches the patient for surgery can either put the patient at ease or place untold fear in her mind. A few reassuring words, a little consideration with personal problems gain for that nurse a great deal of faith from that patient. A simple explanation of what she is to do, such as catheterization, enema, infusion, blood sample, or medication will ease an unknowing mind and save that patient a great deal of anxiety, seemingly unimportant but actually of grave importance to **that patient.**

A successful operation depends on many small, non-glamorous, less emphasized tasks. Years ago surgery was performed quite the same technically as it is today. Procedures have not changed a great deal, but results have, and these results are now better because of such small things in themselves that we will discuss. Someone first noticed the incidence of wound infection was lowered with shaving of hair over operative site, then followed use of soap and water to the skin, plus untold numbers of antiseptics, iodine, phenol, mercurochrome, merthiolate, and so on, and now the war has shown us soap and water is the crux of the whole thing. As long as the skin is prepared properly with soap and water we can paint goose grease over an operative site and get the same results. This is not a peculiar fancy of any particular person; it has been proved by necessity and simplification.

Operating room techniques have changed in some instances. Surgeons of twenty years ago utilized suture heavy enough to catch ten-pound fish with, using double strands of chromic No. 2 and chromic No. 4. Stay sutures or retention sutures were quite common, no one ever thinking wounds would heal without them.

Postoperatively the ritual was even more elaborate, three-inch widths of overlapping adhesive tape were used from symphysis to lower costal margin, preventing expansion of the abdomen and chest, limiting respiratory effort and encouraging pneumonia, and atelectasis. If associated plastic work was done on the vagina, perineal pads, T binders and packs were placed in the vagina, all adding to increased incidence of infection, actually of no value, and only a source of discomfort to the patient and a burden to the nursing staff. Packs used to stem bleeding in the vagina are still used at times but are removed within twenty-four hours.

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*Read before the Lauderdale Nursing Association.

Twenty years ago upon return to the ward from the operating room, the patient was bundled into bed with flannel blankets, packed high with hot water bottles and in this manner quickly dehydrated. She was then placed in Fowler's position with legs bent at the knees resulting in interference with blood supply and frequent thrombosis.

Now, that she was well dehydrated, held immobile in bed, lashed tightly with heavy suture, and wrapped in an unnecessary girdle of adhesive tape, it was seen fit to add insult to injury and starve her for forty-eight hours with sips of water and broth, and maybe crushed ice if she dared not swallow.

To move the bowels and urinate was a real problem, the perineal dressings, T binders all had to be removed, two people to pick the patient up and then attempt to defecate, or move the bowels lying flat on the back. Then the ritual of washing the perineum with antiseptics. Little wonder a patient would hold out for days, develop postoperative distention, fecal impaction, and bladder atony from overdistention with many resultant catheterizations!

The early 1930's began to show a change. A few courageous souls began to think and strive for simplification. Gynecological cases as a rule do not include bowel surgery other than incidental appendectomy and should not include bowel handling. So why starve the patient for days? Patients were consequently not dieted with water and broth, but fed following the operation as soon as they reacted. An empty bowel produces maximal amounts of gas because the fecal stream is slowed and putrefactive bacteria grow in abundance, helping to promote the paralytic ileus we all know so well.

We began to find adhesive tape did not hold wounds together, and rope-like suture only killed larger areas of tissue and contributed to break down of wounds. Animal experiments proved conclusively, smaller suture material caused less tissue reaction, and sutures tied loosely allowed quicker healing. Consequently fewer dressings and smaller and smaller suture material have become basically more sound in closing wounds.

As early as 1916, it was proved by Plass of Johns Hopkins University, soap and water washing, not rinsing of vagina was better than swabbing the vagina and perineum with pretty red, yellow or brown solutions. This has been substantiated, proved again and again by lower incidence of infection, and better wound healing, with less postoperative drainage through the vagina.

Fowler's position, with bent knees and pillows under the legs, fell into disrepute about ten years later.

The story of early ambulation has been called a new fangled idea. This is not true. Twenty years ago this was started and proved in isolated teaching hospitals, when family prejudice and age-old custom did not inhibit its use. The war days made it a necessity because of bed shortage, and now we humbly accept it as a good postoperative care. When we think of the people who developed thrombosis and died because prejudice would not allow them out of bed—we should be ashamed! That incidence now has been lowered to about 1 per cent.

Fluid balance became the main weapon in maintaining a patient in good postoperative condition. The swing away from hot water bottles, blankets with perspiration, dehydration, and starvation, has been gradual and now can be safely and scientifically stated. Adequate fluid balance should be maintained at about 2,500 to 3000 cc. glucose (without saline) a day in uncomplicated surgery cases. No argument arises there today.

Needless to say, the trend in the past few years has been away from reliance on numerous drugs that seem to answer every need the patient encounters in surgical complications, drugs to erase shock, drugs to wake the patient up, to put him back to sleep, to relieve this and that, most of which add only insult to injured organs, and give temporary relief, and cause mostly confusion as to true status of the patient. The drug companies are to blame for this, and give us as nurses and surgeons, a false sense of security at the expense of the patient's life.

Surgical shock, the fear of every surgeon, has been reduced as a surgical hazard with the availability of stock blood. Transfusions once feared, and always a source of anxiety to the patient, are now accepted as the most potent weapon we have to prevent surgical complications, and are now used routinely.

Adequate preparations on a simple sound basis, with reliance on surgical and nursing principles, and not mercurochrome and rope, with physiological treatment of shock, postoperative conditions, and wounds, should be the cardinal features of our gynecologic and nursing care of patients who intrust themselves to us for treatment.

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Evaluating the Gynecologic Patient*

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It is not the purpose of this paper to present anything new in connection with the practice of gynecology. On the contrary, it is submitted with the idea of reaffirming certain principles with which we all are familiar, and which, with the contempt bred of familiarity, we may at times be prone to neglect. This is a plea for consideration of the female patient, whatever her complaint, as an integrated whole instead of a presenting symptom or symptom complex. This discussion will deal only with the general aspects of the office handling of the gynecologic patient, with the hope that the thoughts presented may be carried further into the fields of differential diagnosis and treatment.

When seeing a patient for the first time sympathy and tact are necessary to counteract the apprehensiveness many women feel on their first visit to a physician. This is especially true when the chief complaint is of a gynecologic nature. A few moments devoted to the patient's comfort and peace of mind at the start will pay off in making her a more cooperative patient; in the final analysis time will be saved by such efforts.

History

After completing the general personal history a gynecologic history may be begun by eliciting a detailed description of menstrual function. Information concerning deviation from normal menstrual activity is always important, and especially so at or near the menopause, for obvious reasons concerning the early detection of cancer of the uterus and cervix. In this connection it is wise to ask about any sort of postmenopausal discharge and spotting following coitus. The dates and character of the last two menstruations should be recorded; this will disclose clearly any recent change in the menses, and will occasionally lead one to suspect the presence of ectopic pregnancy or early uterine pregnancy without amenorrhea. The number of pregnancies, character of prenatal courses and deliveries, with a detailed history of any abortions will greatly aid in evaluation of the patient. Of especial importance is the history of instrumental invasion of the uterus followed by sepsis.

The presence of leukorrhea is frequently withheld unless brought out by questioning. Most women consider a certain amount of discharge to be normal, and often one with profuse leukorrhea does not think it worthy of mention. Occasionally, when a patient does not understand the terms "leukorrhea," "discharge" or "whites" an affirmative answer to questioning concerning vulval itching usually indicates the presence of leukorrhea.

Urinary complaints should be elicited in the gynecologic history, as they are often associated with pelvic disease, pelvic structural faults in parous women and urinary infection incident to anatomic lesions. All parous women should be asked concerning urinary stress incontinence; however, the reflexes should be checked on all patients with any kind of urinary incontinence, and Wassermann and spinal fluid studies done if indicated before advising surgery. This will preclude the embarrassment attendant upon the repair of a cystocele or urethrocele for the cure of incontinence due to tabes.

Dyspareunia is a symptom seldom volunteered by the patient, but often elicited on questioning. In taking a history on married women it should not be overlooked. Dyspareunia, with consequent fear of coitus, precipitates serious marital difficulty and may contribute to dissolution of the home. This, and other forms of sexual dissatisfaction, must be drawn out by tactful questioning. Haste at this point is dangerous, for the patient considers that she is confessing her own sexual inadequacy, and considerable psychic trauma is frequently involved. Often the trouble is caused by a thoughtless or ignorant husband primarily concerned with his own satisfaction, and when this is the case he must be interviewed. In such instances the chief role of the physician is that of confessor and adviser, but in it he may be able to render helpful service.

Inquiry should be made concerning pain or discomfort in the low abdomen or back. There are numerous intrapelvic conditions which may produce these symptoms, and when such a history is obtained the pelvis must be held suspect until proved innocent. A sensation of pressure in the pelvis, vagina or rectum, or a constant desire to defecate frequently indicates the presence of pelvic anatomic disarrangement.

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*Read before Northeast Medical Society, June 1950.

History of previous treatment should be obtained. If cauterization or conization of the cervix has been done in the past the number of follow-up dilations and the intervals between them should be recorded. Description of any previous surgery should be sought, and if the patient is ignorant of what was done the surgeon responsible should be contacted if possible.

Examination

After a most detailed history has been taken examination will often reveal unsuspected symptom-producing lesions of the reproductive system. Parous women submerged in the toil and cares of family responsibilities may all too soon forget how they felt when they possessed an intact pelvic floor and firmly supported pelvic viscera. While realizing that all is not well in the lower region they are not aware of the type or degree of the abnormality, and many have come to accept their suffering as part of woman's burden. Discovery of such lesions awaits careful gynecologic examination.

On occasion, postponement of pelvic examination in the case of a virgin is justified until after failure of therapeutic trial. After such failure, or if presenting symptoms warrant, the examination should be completed. If the patient is a child or young woman the mother or other attending relative should be asked to be present during the examination. While examining the external genitalia the clitoris should be briefly examined for adhesions or preputial redundancy, taking care to avoid titillation of the clitoris. If the hymen is not intact vaginal palpation should not be carried out with two fingers before the startled gaze of the mother, nor should an ordinary bivalve speculum be inserted while she is present. The patient will not be helped by the injection of doubt and concern into the minds of her family. If the hymen is intact but comfortably admits the index finger, the second finger may be inserted into the rectum and recto-vagino-abdominal palpation done. If vaginal entry is denied the index finger it may be inserted into the rectum and recto-abdominal palpation carried out. Telinde does recto-abdominal palpation routinely on all married patients and checks findings by vaginal examination, in order to learn better to interpret rectal findings. It does not seem necessary to routinely visualize the cervix of the virgin unless the history or findings on palpation indicate the possibility of a cervical lesion. When such is the case any one of a number of so-called virginal specula or a colposcope may be used. Light anesthesia is at times indicated for such examinations.

If the patient is married she should have a pelvic examination as a matter of routine during her initial work-up, and thereafter whenever she presents gynecologic complaints. From about age forty to fifty-five she should have one or two pelvic examinations each year. The examination should follow a definite plan, so as to avoid omitting some part of it. After examining the external genitalia, urethral meatus and perineum and noting presence or absense of a cystocele or rectocele a bivalve speculum is inserted. If any abnormal secretions are present a sample should be removed and examined microscopically both in saline suspension and stained smear. The cervix is examined for abnormal position, lacerations, hypertrophy, elongation, cysts, versions, erosions and newgrowths. It would appear that the most innocent-looking cervical erosion should be biopsied. Recent work done by the Northwestern University group indicates that carcinoma in situ will occasionally be found in a perfectly normal-appearing cervix. Certainly no cervix should be coned or cauterized before tissue has been removed with a scalpel or biopsy forceps for examination by a pathologist. The diathermy loop should not be used to obtain tissue for this purpose. In doing the biopsy tissue should be taken from the most abnormal-appearing area, and from at least one other site. There are those who biopsy at three, six, nine and twelve o'clock, and others who do a circular biopsy or endocervical resection by coning the terminal cervical canal and external os with a scalpel. The less radical methods are easily carried out in the office, requiring no anesthesia. If bleeding is encountered a small oxycel sponge held against the cervix for twenty-four hours by a vaginal pack will usually stop it. The Papanicolaou cervical smear is an interesting and useful diagnostic adjunct in the larger medical centers, but its usefulness does not extend to most of us. It is a time-consuming procedure requiring training and experience on the part of both the physician and the pathologist, and, while a positive result is helpful, a negative one is of little value.

After inspecting the cervix a single-tooth tenaculum is applied to it and gentle traction exerted to ascertain the degree of descensus and concomitant pain. The instrument may be left in place and recto-vagino-abdominal and recto-vagino-sacral palpation carried out both with and without traction on the cervix in order to rule out or localize lumbosacral, sacro-iliac, coccygeal and utero-sacral strains or sprains. If an enterocele is present it will be discovered during recto-vaginal examination. The tenaculum is then removed and palpation of the fundus and adnexae completed. Size, mobility, position and consistency of the uterus and adnexae and the presence of any abnormal masses should be noted, as well as the degree of pain incident to palpation and manipulation. The bases of the broad ligaments should be carefully palpated for induration, tenderness or other evidence of parametritis or intraligamentary newgrowth. Recto-vaginal examination is of especial value for this purpose. During this phase of the examination the characteristic shot-like nodules of endometriosis will be discovered if present.

If the history and examination fail to explain the patient's symptoms more specialized diagnostic measures should be recommended. Hysterosalpingography and diagnostic dilation and curettage are among the more valuable of such procedures. X-ray plates of the pelvis, made after instilling an aqueous radiopaque medium through the cervical canal, and reveal any abnormality of size or contour of the uterine cavity and will frequently disclose the presence of an endometrial polyp or submucous fibroid. At the same time patency of the tubes is established by passage of radiopaque fluid through them. Diagnostic curettage should be urged for any woman in whom there is abnormal uterine bleeding which cannot be fully explained on a functional basis, or for which no obvious cause can be found. Every woman past the menopause who bleeds, spots, or has a brownish discharge, and whose cervix is not responsible, should have the benefit of diagnostic curettage.

Conclusion

Some of the diagnostic measures useful in evaluating the female patient have been discussed. It is not implied that every procedure mentioned should be carried out on each patient, but each procedure has a place in the proper work-up of the gynecologic patient, and should be employed when indicated. The importance of these measures is stressed because it is seen that they will frequently bring to light pathologic conditions in which the ease of correction is out of all proportion to the suffering they cause. Too many women bear symptomatic pelvic anatomic disorders without mentioning them to a physician until forced to do so in later life by final failure of ligamentous, fascial and muscular supports with perhaps complete prolapse of the uterus. Elimination of the time lag between incipiency and correction of such conditions would seem to be a worth-while goal. Finally, practice of the principles which have been discussed will at times result in discovery of early cancer of the reproductive system, and will save lives by making it possible to begin treatment early enough to be curative.

It is the physician's responsibility to take the initiative in discovering unsuspected or intentionally hidden lesions and to see that they are properly treated if possible. It should be remembered that each patient is an individual, not a symptom complex, and that on occasion her chief complaint will be in no way related to her most serious pathologic process. If she is aware of her condition but thinks it irremediable, her gratitude will know no bounds when she is restored to health; and if an unsuspected lesion is brought to light and eradicated her appreciation will be in no degree diminished by her previous ignorance of it.

Treating symptoms we are doctoring. Treating patients we are healing.

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Deep Infection of the Neck*

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ETIOLOGY: There are many factors which contribute to the development of a cervical abscess or cellulitis. The intensity of inflammatory reaction produced by pathogenic bacteria is proportionate to their virulence and to the resistance of the involved tissues. Chronic, toxic or destructive diseases may materially diminish the vitality of the tissues and their inherent ability to withstand infection.

Neck infections are invariably secondary to infection elsewhere in the body. A cervical abscess or cellulitis is primary in only rare cases, such as an infection following a traumatic wound or surgical operation on the neck. A large percentage of cervical abscesses are secondary to some primary infection in the mouth, ear, nose or throat. The tonsils have been thought to be the greatest single cause. The sex and age of patients with infection of the neck are of little importance.

Dental disease is frequently the forerunner of severe deep neck infection. The infection may come from disease of the crown or root of the tooth or from the gums. Those cases of dental origin most frequently follow dental extractions after the use of local anesthetics by needle injection. Most of these come from teeth of the mandible. When the infection is dental in origin the submaxillary or Ludwig's angina type may be anticipated. About 20 per cent are considered to be of dental origin.

The temporal bone may be the point of entrance. If the infection comes from the cells in or near the mastoid tip there results a condition called Bezold's abscess. The usual point of exit of pus from the mastoid cells is through the cortex of the medial aspect of the mastoid tip and through the digastric groove.

Infection of the nose, nasal sinuses and nasopharynx sometimes cause abscess of the uppermost retropharyngeal lymph nodes situated at the level of the second cervical vertebra. This constitutes the well known retropharyngeal abscess and occurs usually in infants and small children.[1]

Bacteriology: The hemolytic streptococcus is the causative agent in more than 50 per cent of these cases of deep infection of the neck. Other organisms which are to be found are Borrelia vincentii, streptococcus viridans, staphylococcus and pneumococcus. Some form of streptococcus is found in 80 per cent of cases of Ludwig's angina. The infecting organism may be an anaerobe and frequently a negative blood culture will result. Cultures should be carried out under aerobic and anaerobic conditions. When the organism is a hemolytic streptococcus there is a cellulitis without necrosis, the fever is high and there is profound intoxication. On the other hand, when the infective organism is the Borrelia vincentii, much tissue necrosis develops and the fever and intoxication are less severe and the process tends to develop and subside slowly.

Symptoms: As a general rule neck infections start with a gradual onset. Toxemia soon appears and increases. The temperature rises day by day until a peak is reached, after which it may gradually fall. There may be chills and sweats. Locally there is a brawny induration. The swelling, redness and pain gradually become more marked until fluctuation of the involved region is finally evident. In some cases this infectious process may appear in four or five days. But in most cases the induration is boardlike and it may take a month for signs of suppuration to develop. New and Erich, in reviewing 267 cases at the Mayo Clinic, found that the average period from the onset of inflammation to fluctuation was about three weeks.[2]

When an abscess lies near the upper part of the digestive or respiratory tract, sufficient edema may occur to make swallowing or respirations difficult if not impossible. Tracheotomy may have to be resorted to.

When the lateral pharyngeal space is involved there is trismus, swelling over the parotid and the tonsil and palate are displaced over toward the median linea. The tonsil itself is not enlarged unless it is directly involved in the infection. This is usually a good point of differentiation between peritonsillar abscess and a lateral pharyngeal space infection.

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*Read before the Section on Eye, Ear, Nose and Throat at the eighty-second annual session of the Mississippi State Medical Association, Biloxi, Miss., May 9-11, 1950.

Infections of the retrovesical space produce dysphagia, dyspnea and dysphonia. Pictures will show an increase in the width of the retrovesical space in both the anteroposterior and the lateral view. Infections of the carotid sheath may cause torticollis. It has been stated that torticollis resulting from infection under the sternomastoid muscle is toward the opposite side, and that resulting from infection along the paravertebral and trapezius muscles is toward the same side.

Anatomy: A thorough knowledge of the anatomy and fascial planes of the neck is essential for proper treatment of these cases. The fascial planes tend to direct and limit the spread of pus in the neck.

The deep cervical fascia has two separate layers, the superficial and the deep. The superficial layer of the deep fascia is entirely different from the superficial fascia and should not be confused with it. The superficial fascia is difficult to demonstrate as such. It includes connective tissue and fat.

Everything in the neck except the skin and platysma muscle is enveloped by the superficial layer of the deep cervical fascia. It has been likened to a tightly-fitted one-piece jacket covering all of the structures between the skull and clavicle. The deep layer is enclosed by the superficial layer. Superiorly this jacket is attached along the upper nuchal line of the occipital bone, the mastoid process and the inferior border of the mandible. Anteriorly it is attached to the symphysis of the mandible and the body of the hyoid bone. Posteriorly it is attached in the midline to the spinous process as low as the seventh cervical vertebra. It is attached inferiorly to the acromion process, the clavicle and the manubrium. The sternomastoid muscle is completely surrounded by this layer. The layer from each side meets its fellow from the opposite side at the midline.

The fascia becomes thick and strong as it approaches the hyoid bone, angle of the jaw and environment of the parotid gland. Where fascia covers the parotid gland at its periphery it is quite thick but as it covers the deeper portion it becomes very thin. This is of great importance because in cases of severe infection of the gland resistance is met with an attempted outward spread but not inward, where it frequently ruptures into the pharyngomaxillary space. There is a very strong attachment of the fascia to the hyoid bone and this produces a strong barrier between the floor of the mouth and the infrahyoid region. In some cases of Ludwig's angina, when the process cannot spread directly downward, it spreads along the posterior belly of the diagastric muscle to the carotid sheath and then deeply in the neck.

The deep layer of the cervical fascia serves to wrap up and enclose each structure or structures in groups of two or three. As the superficial layer passes under the sternomastoid muscle it gives off a branch to form the carotid sheath, which surrounds the carotid artery, internal jugular vein and vagus nerve. A second branch forms the prevertebral fascia. This is posterior to and joins the pretracheal fascia to surround the esophagus, trachea and thyroid gland and is called the visceral fascia. The pretracheal fascia is an offshoot of the superficial layers of the deep cervical fascia near the under side of the sternomastoid muscle. It encloses the omohyoid, sternohyoid and sternothyroid muscles and meets the pretracheal fascia from the opposite side. Another small offshoot envelops the tendon of the omohyoid muscle.[3]

From a surgical standpoint the cervical fascia is the most important structure in the neck. It prevents deep infections from pointing on the surface and frequently causes abscesses to follow certain planes and channels. These abscesses can be found in areas where there is a lot of connective tissue. There is an abundance of connective tissue in the prevertebral space and to a slightly less extent along the carotid sheath. Knowing this, the surgeon will know where to look and can reach these areas by blunt dissection.

In order to work in a clean field in the neck the surgeon must see the veins first, not cut them first. Many are hazy on the facial vein, the lingual vein and the superior thyroid veins. The facial vein is just below the tip of the great horn of the hyoid bone and the lingual just above it. A vein which often leads to confusion is a branch of the anterior jugular which runs under the inner edge of the sternomastoid muscle. It is often mistaken for the internal jugular, especially when one is interested in ligation of the internal jugular.

Ludwig's Angina: Ludwig's angina is a virulent, rapidly spreading phlegmonous process arising from infections within the floor of the mouth or gingiva, which is located to a definite anatomical space. This space has for its floor the mylohyoid muscle, for its lateral walls the bodies of the mandible, for its posterior wall the muscles which form the base of the tongue and for its roof the tongue and mucosa covering the floor of the mouth. This disease is characterized by severe involvement of the cervical cellular tissue and profound toxemia.[4]

The original site of infection is usually an ulcer of the oral mucosa, a carious tooth or active gingivitis. The rapidly spreading cellulitis may assume grave proportions and menace the life of the patient by producing severe edema of the larynx and subsequent suffocation.

The tongue is forced upward toward the roof of the mouth simultaneously with marked edema of the mucosa of the floor of the mouth. Externally there is a tense, nonfluctuant swelling of the soft tissue of the neck which may extend from the lower border of the mandible down to the clavicle. This usually becomes board-like in its rigidity and is extremely tender on manipulation.

An abscess may be formed which may occupy one of four positions. It may be found in the potential space between the muscles of the base of the tongue and the geniohyoid muscle or it may be observed to lie at a lower level between the geniohyoid and mylohyoid muscles on either side of the median line of the neck.[5]

One may incise these cases either in the midline along the median raphe or laterally below and parallel with the mandible. The sharp dissection is carried down to the muscle and the muscle penetrated by blunt dissection. If pus is encountered, rubber tissue drains are inserted. If there is no pus, the incision is left open in order to drain off edematous fluid and aid in decompression. One may use an aspirating needle to find the exact location of the pocket of pus in many cases and thereby eliminate extensive blunt dissection or soft tissue trauma.

When the infection is predominant in the neck, an approach between the muscles of the two sides of the tongue in the floor of the mouth, in the midline, may be the most direct. The incision through the skin may be horizontal or vertical. The deep fascia is exposed and incised in the midline from the symphysis of the hyoid bone, and the approach is continued through the median raphe between the muscles of the two sides. The tongue may thus be explored throughout its entire thickness and at the same time the finger or blunt instrument may be used to explore laterally to either side at the several levels of muscle planes. No vessels or nerves are encountered.

Pharyngomaxillary Space Infection: This space lies central to the parotid gland and posterior and deep to the submaxillary gland. It is bounded laterally by the ramus of the mandible, the internal pterygoid muscle and the fascia covering it. The medial wall is formed by the superior constrictor muscle and its fascia. The anterior wall is limited by the pterygomandibular raphe which is joined by the fascia reflected from the pterygoid and superior constrictor muscles. The posterior wall is made up of the styloid process and the stylohyoid and the stylopharyngeus muscles. The floor and roof are continuous with the carotid sheath.

Infection of this fossa may be from the parotid or the submaxillary gland. Parotid abscesses usually rupture internally and not externally. Injuries and infections of the pharynx, for instance tonsils, peritonsillar abscess which has broken through or lymphatic drainage, or result of faulty local anesthesia, is often the causative factor. Diagnosis is easily arrived at with a history of infection or injury to the lateral pharynx, of sudden onset, accompanied with chills, a rapid rise in temperature and, on examination of the pharynx, a swelling of the lateral pharyngeal wall, swelling of the uvula, and the soft palate pushed to the opposite side, accompanied by difficulty or inability to open the mouth owing to trismus of the internal pterygoid.

The submaxillary approach described by Mosher in 1929 is classical for most men.[8] He recommended a liberal T-shaped incision which, after wide elevation and retraction of the flaps, gives a wide shallow field with maximum visibility. The crossbar of the "T" runs parallel with the lower border of the jaw and about one-half inch below it. The vertical portion runs downward just anterior to the anterior margin of the sternomastoid muscle. The incision goes through the skin, subcutaneous fascia, and platysma muscle down to the superficial layer of the deep cervical fascia which covers the salivary glands. After exposure of the gland the first structure encountered is the facial vein which usually runs across the lateral part of the submaxillary gland and superficial to it. The vein is divided between two ligatures.

The submaxillary gland is identified. If one pushes the hyoid bone from the opposite side the proper level can be identified and the fascia covering the gland incised and the gland exposed. The inferior border of the gland is exposed and elevated with a blunt instrument or finger, working outward toward the lateral part of the gland. One must be careful to avoid injury to the facial artery which either enters the gland or courses along beneath it to reach the border of the jaw. When the gland is lifted the artery goes with it. The most difficult part of the operation has now been accomplished. The finger is then inserted under the lateral part of the gland in the direction of the angle of the jaw and the stylomandibular ligament felt. It is then carried upward toward the styloid process deep to the mastoid tip. When the process is felt the finger passes upward beneath it to the base of the skull. It is then in the pharyngomaxillary space. It is practically impossible to make a false passage with the finger for this is the path of least resistance and one gets the sensation that there is no other place for the finger to go. If there is a pharyngeal fistula the finger might enter the pharynx.

Submaxillary Space Infection: There is usually a history of infection from dental origin, the vast majority of which follow the extraction of teeth under local anesthesia. The hypodermic needle frequently forces infected material into this space or provides a pathway through nature's protective barrier for infected material to pass into the submaxillary space. The infection may spread beneath the fascial planes to the sublingual and submaxillary regions and eventually into the pharyngomaxillary or mediastinal regions and may cause death. The diagnosis is made by the location in the submaxillary space and the history frequently obtained of recent dental extraction. For this type of surgical drainage the best method is the submaxillary approach that has just been described and originated by Mosher.

Retropharyngeal Abscess: This is also known as peripharyngeal abscess and is more common in children under three years of age. The infection invades the retropharyngeal or peripharyngeal spaces by veins or by lymphatic drainage. These usually follow an acute or chronic infection of the nose or nasopharynx or may follow any of the acute fevers. It may break through into the pharyngomaxillary space or it may extend into the submandibular space and simulate Ludwig's. A good diagnostic point, however, is that Ludwig's rarely occurs in children. Swallowing becomes difficult and occasionally dyspnea develops.[7]

Treatment involves early and adequate drainage through the mouth or externally. If drainage is through the mouth extreme care must be taken in the evacuation of the abscess. The patient should always be placed in the Rose position and a suction apparatus must be used in order to prevent the aspiration of infected material into the lungs. If an external approach is used, the incision is made along the anterior border of the sternomastoid muscle similar to the opening of a buccopharyngeal abscess.

Parotid Space Infection: For abscess in the parotid fossa the incision should be made parallel with the branches of the facial nerve to avoid severing them. The skin incision may be single but the capsule of the gland may be opened in several places. When the infection first involves the retromandibular or pharyngeal process of the gland, from the parapharyngeal area, it is best dealt with by draining the pharyngomaxillary fossa through the submaxillary approach . For abscess of the gland itself Furstenberg advocates a vertical incision through the skin just anterior to and close to the auricle, running from the zygoma downward and curving backward just below the lobule of the ear to the mastoid tip, thus exposing the fascia of the parotid gland. The fascia covering the parotid gland is rather firmly attached to the overlying skin. Then through horizontal incisions through the capsule of the gland the abscess or abscesses are drained. It is important not to sever the facial nerve in making the approach through this incision.

Posterior Neck Infection: Recently Hall[8] has described a posterior neck infection which is in the posterior triangle and commonly simulates Bezold's abscess. It is localized to a very small area and is confined to the deep cervical nodes. Anatomically it lies deep to the sternomastoid muscle and the more superior its position, the more it simulates Bezold's. It is a suppurative adenitis. Because of the close proximity of the carotid sheath, it is possible for a periphlebitic process or perijugular abscess to develop.

The history is not too helpful. The patient may state that there has been a vague scalp infection or a recent pharyngitis or slight cold. There is no characteristic bacteriological picture. Streptococcus hemolyticus or viridans may be found. Some cultures may be reported as negative due to the use of chemotherapeutic or antibiotic agents. The leucocyte count and temperature may be very high. Torticollis and neck stiffness will always be found and may simulate polio or disease of the cervical spine. The head is rotated toward the normal side with lateral flexion toward the diseased side. The head can be turned, painfully, toward the normal side but when the patient attempts to turn it toward the diseased side, the head, neck and shoulder splint the movement. These signs serve to differentiate this condition from a run-of-the-mill adenitis. The pain and stiffness usually begin about 12 to 24 hours before the onset of the swelling.

Chemotherapy and antibiotic therapy should be started at once the diagnosis is made. If the symptoms persist, surgical drainage should be carried out. There is not always an area of fluctuation. But there should always be slight pitting upon firm pressure since this is highly suggestive of pus beneath the cervical fascia.

Between the posterior edge of the sternomastoid and the anterior edge of the trapezius is a triangular sheet of fascia. One makes a transverse incision extending posteriorly from the posterior border of the sternomastoid, and when the edematous tissues are divided, the tense and prominent cervical fascia will be apparent. The fascia is opened with curved forceps or scissors and the abscess cavity entered. In many cases the swelling makes the identification of landmarks difficult, but one can usually identify the posterior border of the sternomastoid.

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DISCUSSION

Dr. Earl W. Green (Hattiesburg)—I have enjoyed hearing Dr. Murry's excellent paper on deep infection of the neck. He has covered the subject in a most comprehensive manner. However, in my experience, fascial space infection does not pose the problem it once did before the days of chemotherapy and antibiotics. It is very rare in my experience in the last few years to encounter an infection of the neck that passes beyond the cellulitis stage.

We must all be grateful for Mosher, Barnhill, Beck and the many others who pioneered in the field of otolaryngology and taught us the significance of the fascia of the neck and the potential fascial spaces and the relationship they bear to each other. We must continue to study the anatomy of the fascia and the potential fascial spaces because the proper drainage of an abscess in the neck depends upon a thorough knowledge of the anatomy involved.

As for therapy, I think the teaching of Mosher of early drainage must be modified as I have had numerous cases that came in with a cellulitis that responded beautifully to chemotherapy and antibiotics and never required surgery. In fact, I can recall but very few cases in the last few years that have required drainage. It is our policy to use both sulfa drugs and penicillin and not rely on either alone, and if we do not get the results expected we continue these and give dihydrostreptomycin or aureomycin.

Dr. V. S. Holmes (McComb)—After hearing Dr. Murry I hesitate to comment on such an excellent paper. Not only did he present us an interesting paper but his manner of presentation was excellent. His review of the anatomy of the neck and his discussion of the different types of infections that we have in the neck area certainly shows that he spent a great deal of time and effort in preparing it.

In any of these cases where there is respiratory embarrassment, a tracheotomy should be done before any attempt at surgical drainage, then the anesthesia becomes no problem. In those cases where there is no respiratory embarrassment, it is wise to have a tracheotomy set up for emergency use. The choice of anesthetic in such cases is local infiltration, but one can satisfactorily use gas induction and ether with the insertion of an intratracheal tube provided there is no abscess pointing inward. I mention sodium pentothal only to condemn it. Since its action depresses respiration, it is a dangerous drug to use in any surgery of the neck where there is a possibility of causing further respiratory embarrassment.

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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Editorials

AMERICAN MEDICINE

The march of medicine for the past one hundred years, and especially for the last fifty, has been miraculous. Fifty years ago a big percentage of our doctors thought their medical education incomplete until they visited the capitals of Europe. Now it is not so, for the United States is the mecca for medical education. Not only do we have the best medical schools in the world, but we are also giving the people the best medical service of any nation on the earth. We are still teaching and practicing free medicine.

Free medicine loves and seeks for the truth. It also loves to serve. The countries of Europe undertook a government control of medicine and lost their leadership, not only slowing down their whole scientific advance in the field but also setting back the health of their people. We can profit by such an example. Regimentation of medicine breaks the sacred personal relationship between the doctor and patient. It tends to kill the doctor's initiative, discount his personal resourcefulness, because he becomes a vassal of the state, to spend more time filling out blanks than treating his patients.

Regimentation of medicine stagnates research, slows down new discoveries of healing drugs and methods, and thwarts the artful application of this time-honored science. More than anything else, it increases the cost. In any promise of something for nothing, there is a joker. When our people permit the government to take their money in taxes to spend it for them, it is like a doctor saying: "You need a blood transfusion. I'm going to take some blood out of your left arm. Then I'll put it back in your right arm. I'll spill some in the process, but I'm going to give you a blood transfusion—with your own blood."

What our free medicine is doing should speak so loudly that the people could not hear the cry of the politician. A hundred years ago life expectancy was about forty years, but now it is nearly seventy years. Life is not only longer, it is bigger in volume. When free medicine is taken away the way is then open for the socialistic state. Communism will be the next step.

Today our nation is the big brother of the nations of the earth. In no other group has there been more evident workings of democracy, progress and peace than in medicine. The profession has consistently striven to meet the challenge of building health assets, physical, mental, and spiritual, that will produce an individual adequate to face life and make a worthy contribution to his community. The doctor enters into the pleasures, joys, sympathies, the social and economical life of the people he serves. Especially is this true of the general practitioner. But the man in research and the specialist have also proved the strength of the American way through amazing accomplishments. Why should any unselfish person wish to change things in the face of such meritorious service?

We should appreciate the efforts of organized medicine and share the wonderful work being done by the American Medical Association in recent years in the interest of better medicine for all the people. Among its active leaders is Secretary George F. Lull, a man of vision and of courage. And out over the nation are the men in general practice who constitute the greater part of the medical profession. These would not leave anything undone that can be done for the people, and in turn our people are receiving service beyond that of any country on earth. We should be grateful and loyal, and resolve to keep it this way.

(*Written for the October* 12 *issues of the* BOONEVILLE INDEPENDENT *and the* COLLIERVILLE HERALD, *for the A.M.A. publicity campaign week.*)

GIFT TO BAPTIST MEMORIAL HOSPITAL

Mrs. Kate Holder Spalding has made a gift to the Baptist Hospital in memory of her brother, Dr. Edward M. Holder, who died in 1946. The bequest is to be used for charity patients as revealed by Dr. Frank Groner, superintendent of this great Memphis institution.

A pioneer on the staff of the Baptist Hospital, Dr. Holder was active in practice in Memphis for fifty years, beginning in 1896. A native Mississippian, has birthplace was out from Guntown, Mississippi, the same house later becoming the home of the Gamble brothers, now of Greenville. Dr. Holder loved the practice of medicine and surgery, he loved people, and he was always interested in his patient regardless of his ability to pay. He possessed medical integrity, and medical knowledge in abundance, and surgical wisdom surpassed by few. His sister's gift is most fitting to a great hospital that he loved.

HOSPITAL SERVICE

Our state is on the way up with a good hospital system. The total plan calls for 37 hospitals with a bed capacity of 2,060 beds. Seven hospitals have been finished and occupied, eight more have been completed, and 22 are now on the way. These hospitals are well distributed. This is important. Nevada leads the nation in hospital beds per capita, but it has the highest death rate for appendicitis of any state in the union. South Carolina has lowest death rate, for its hospitals are quite well distributed. It is good economy in many ways to have the hospitals near the people. The chief site of injuries and accidental deaths is no longer in the industrial centers, the large factories, but on the highways, in the homes and on the farms.

Mississippi did have the lowest number of hospital beds per capita and the lowest occupancy, but when our system is completed the state will have as many as can be utilized for the present perhaps. The people are becoming more and more hospital-minded and insurance-minded also, which has a definite relation to occupancy. The national average recommended now is about four and one half beds per thousand. Mississippi will have about three when the present system is completed.

Construction of hospitals alone will not solve all of our problems for the sick. It behooves us to approach with searching mind the widespread complaints concerning the cost of medical care. Medical care is high, but the cost has not increased in proportion to the cost of living. The cost of medical care was 45 per cent higher in 1949 than in the normal years from 1935-39, while living expenses rose 69 per cent in the same period. Other interesting figures furnished by the American Medical Association are: Doctors' fees are up 38 per cent, dentists' 51 per cent, prescriptions 37 per cent, hospital rates 127 per cent, but the average stay in the hospital was shortened so that the patient's bill went up only 67 per cent.

Hospital stays may have been cut too much. It might be well to pause, think, and consider this. After all, hospital expenses are mighty high. Hospitals need to be operated on their own local level. A small hospital in Mississippi does not need to try to follow the methods of big ones in New York, Chicago or California. Mississippi should soon be able to give the people the best medical service in the nation at the least cost.

ACS SECTIONAL MEETING

There will be a Sectional Meeting of the American College of Surgeons in St. Louis on January 22 and 23, 1951, with headquarters and program at Hotel Statler. The members of the College of Surgeons are invited and also any other doctors who wish to attend.

The states covered are Missouri, South Dakota, North Dakota, Minnesota, Wisconsin, Iowa, Kansas, Louisiana, Arkansas, Mississippi, Illinois and Indiana, and an excellent and practical program has been arranged. There will be an extra day of operative clinics besides the scheduled days.

News and Comment

MISSISSIPPI HOSPITAL PROGRAM

The Mississippi Commission on Hospital Care offers the following summary of progress on the construction of hospitals over the state:

Project No. 1 Leake County Memorial Hospital, Carthage—50 beds
Project No. 2 Tippah County Hospital, Ripley—40 beds
Project No. 4 Hardy Wilson Memorial Hospital, Hazlehurst—50 beds
Project No. 5 Humphreys County Community Hospital, Belzoni—40 beds
Project No. 9—North Sunflower County Hospital, Ruleville—30 beds
Project No. 10 George County Hospital, Lucedale—25 beds
Project No. 11 Green County Hospital, Leakesville—25 beds
Project No. 12 Kemper County Hospital, DeKalb—25 beds
Project No. 14 Northeast Mississippi Hospital, Booneville—50 beds
Project No. 19 Sharkey-Issaquena Hospital, Rolling Fork—25 beds
Project No. 21 Marion County General Hospital, Columbia—80 beds
Project No. 23 Felix Long Memorial Hospital, Starkville—40 beds
Project No. 27 Jefferson Davis County Hospital, Prentiss—25 beds
Project No. 28 District Two Community Hospital, Durant—25 beds
Project No. 38 Tunica County Hospital, Tunica—25 beds
Total—15 Hospitals — 555 beds.

In addition, 22 other hospitals are under construction, containing a total of 1505 beds.

Seven of the new hospitals are now in operation and were opened on the following dates:

Northeast Mississippi Hospital, Booneville, December 1, 1949

Tippah County Hospital, Ripley, April 21, 1950

George County Hospital, Lucedale, September 25, 1950

Kemper County Hospital, DeKalb, September 17, 1950

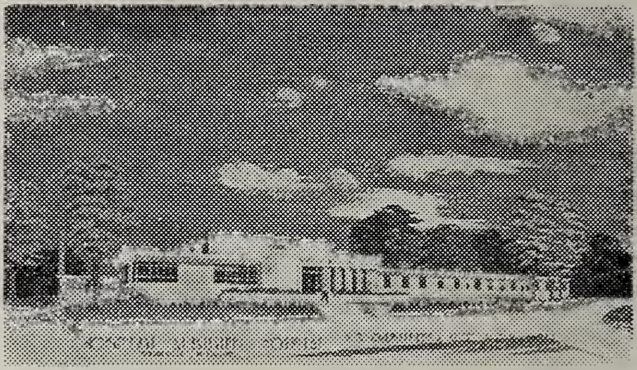
Hardy Wilson Memorial Hospital, Hazlehurst, September 16, 1950

Marion County General Hospital, Columbia, September 27, 1950

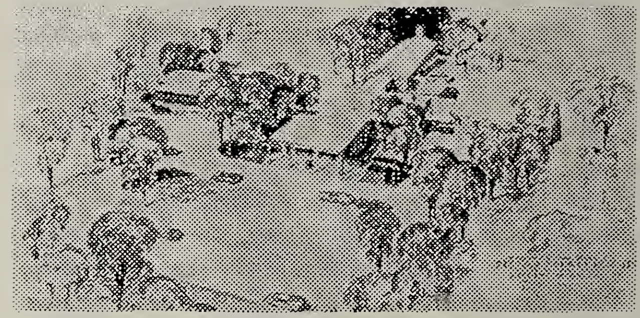
North Sunflower County Hospital, Ruleville, October 9, 1950.

Eight other hospitals are now in the process of assembling staff and equipment preparatory to opening.

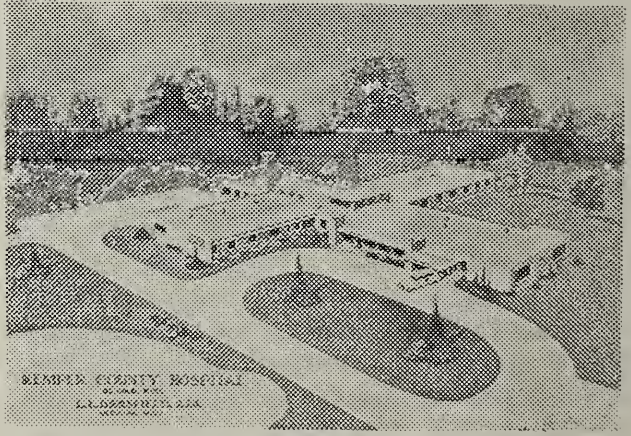
Sketches of five of the seven completed are shown below.



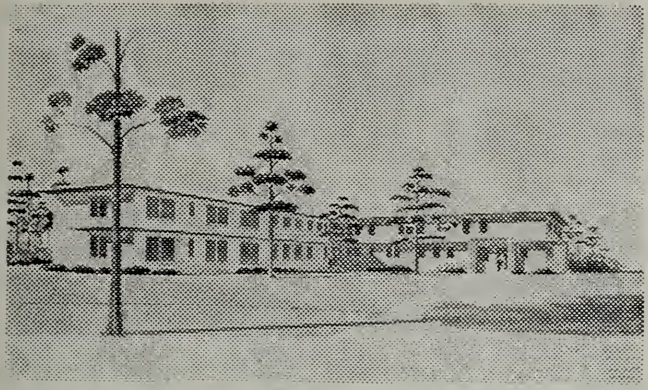
Northeast Mississippi Hospital, Booneville
Opened December 1, 1949—50 beds



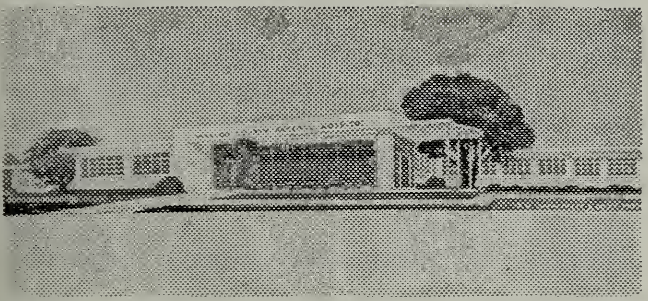
Tippah County Hospital, Ripley
Opened April 21, 1950—40 beds



Kemper County Hospital, DeKalb
Opened September 25, 1950—25 beds



Hardy Wilson Memorial Hospital, Hazlehurst
Opened September 25, 1950—50 beds



Marion County General Hospital, Columbia
Opened September 27, 1950—80 beds

DR. BEACHAM NAMED HOSPITAL GROUP HEAD

BILOXI, Miss., Oct. 13—Mississippi Hospital administrators were urged here Friday to develop more harmonious relation with their medical staffs.

Ernest L. Bliss, Jackson, Tenn., hospital administrator, said that one of the biggest problems confronting hospitals is the relations between administrators and the doctors who compose the staff.

Mr. Bliss was one of several speakers at Friday morning's closing session. He told the administrators they should know their doctors better and deal with them individually.

Dr. A. V. Beacham, Magnolia, was named president of the association.

Preston Hill, Picayune, was named secretary-treasurer, and Dr. W. H. Brandon, Clarksdale, and J. T. Grantham, Jackson, were named to the Board of Directors.

The Mississippi State Anesthetists Association, meeting in conjunction with the hospital group, named Mrs. Melba Carmichael, Meridian, as its new president.

Other officers named were: vice-president, Miss Jenny Starchevich, Jackson; secretary, Miss Cally McCully, Meridian, and treasurer, Miss Elizabeth French, Hattiesburg.

—Commercial Appeal

DEATHS

FORMER OLE MISS DEAN SUCCUMBS

A former dean of the University of Mississippi School of Medicine died in a Memphis hospital September 8. He was 50-year-old Dr. J. B. Looper of Senatobia Miss.

He left the Mississippi faculty in 1945 to take over as health officer for Tate and DeSoto counties. Death came after a series of illnesses which followed a severe siege of pneumonia last winter.

Dr. Looper was a graduate of the University of Chicago Medical School, Chicago, Ill.

Survivors include the widow, Mrs. Marguerite Haase Looper; a son, Joseph William; and a daughter, Mary, all of Senatobia.

DR. C. E. MULLINS

Funeral services were held at 2 p.m. for Dr. C. E. Mullins at his home in Bude. Dr. Mullins, who was 66 years of age, died at the King's Daughters Hospital in Brookhaven following an extended period of illness.

A graduate of the Memphis Hospital Medical College, Memphis, class of 1909, he was licensed in 1914.

Dr. Mullins was a veteran of World War I. He practiced medicine first in Natchez, later moving his practice to Bude. He moved to Brookhaven, where he was engaged in active practice for several years, moving back to Bude to open the Franklin County health office. He was a faithful member of the Methodist church, serving as steward for many years.

Dr. Mullins is survived by his wife, Mrs. Wilma Conerly Mullins, Bude; two brothers, John, of Meadville, and R. T., Santa Fe, New Mexico; three sisters, Mrs. I. G. Callender, Edwards; Mrs. L. Costley, Meadville.

DR. WILLIS WATKINS

Dr. Willis Watkins, beloved Neshoba County physician, died at his home early Wednesday morning following a prolonged illness.

Dr. Watkins had returned only a few hours prior from a Memphis hospital, where he had gone for treatment over the week-end. He was the father-in-law of Mayor Jimmy Haddock of Philadelphia and T. J. Durett, superintendent of the Waynesboro city schools.

Dr. Watkins graduated from the Memphis Hospital Medical College, Memphis, in 1902, and entered practice in Mississippi two years later.

He had been a practicing physician for approximately fifty years and only a few weeks ago the Business and Professional Women's Club of Philadelphia sponsored "Dr. Watkins Day" in Neshoba County, honoring him.

Dr. Watkins was one of the few remaining "country doctors."

Married to Miss Carrie Burrage on September 5, 1905, she with three children, Mrs. Ruth Durrett of Waynesboro and Mrs. Bessie Blount and Mrs. Ellen Watkins Haddock, Philadelphia, survive. Three sisters, Mrs. J. L. Donald and Mrs. Walter Shiner of San Antonio and Mrs. Alma Haskins, Philadelphia, five grandchildren and two great grandchildren also survive.

DR. JOHN S. EWING

Dr. John Sharp Ewing, 70, of Newellton, La., died in a Vicksburg hospital September 18 after an extended illness.

Dr. Ewing was a former resident of Vicksburg, and had practiced medicine there for 30 years before moving to Newellton.

He was an officer in World War I, serving in the medical corps. He was a graduate of Tulane University.

He is survived by his wife and a son, Dr. John S. Ewing, Jr., of Mobile, Ala.

DR. J. D. PURNELL

Services were held September 22 at the Myrtle Methodist Church for Dr. J. D. Purnell of Myrtle, who died at Shands Hospital, New Albany, He was 83.

Union County's oldest physician, he had practiced medicine 50 years. He had recently retired.

Dr. Purnell received his medical education at the University of Tennessee, Knoxville, graduating in 1892. He was licensed to practice in Mississippi the preceding year.

He is survived by his wife, Mrs. Martha Smith Purnell; two sons, Joe Purnell of San Angelo, Tex., and James B. Purnell, Jr. of Myrtle; four daughters, Mrs. George Hemeter, of McComb, Mrs. Lintell Hargrove of Chipley, Fla., Mrs. Marion Rayburn, Myrtle, and Mrs. Lloyd Simmons of Myrtle, one sister, Mrs. Charlie Rucker of Ripley; two half-brothers, Dr. R. L. Purnell of Marianna, Ark., and J. B. Purnell of Memphis, Tenn.; a half-sister, Mrs. Rhene Whitting of Atlanta, Ga.; eight grandchildren and two great grandchildren.

BOOK REVIEWS

Adolescent Problems, by William S. Sadler, M.D., F.A.P.A., Chicago, Ill., Consulting Psychiatrist, Columbus Hospital. Published by the C. V. Mosby Company, St. Louis, Mo. Price $4.75.

Hardly a textbook on the average physician's favorite shelf can give more than a mere flicker of light on the daily questions of psychological and emotional difficulty beclouding the lives of his patients. Much of the trouble begins in childhood, when home and family life create problems that come to the physician for solution later. These problems, most acute in adolescence, have received a wider study in recent years, and the author of **Adolescent Problems** approaches the subject in systematic handbook fashion. He offers the necessary psychological and psychiatrical background with definitions and methods, but the book's chief merit lies in the author's own personal discussions and observations. He writes in a comfortable, intimate manner, yet so skillfully organizes his material the book is readily adaptable to school room use. Physicians will find it up-to-date, safe, and understanding. They will depend on it for their own practice, and for assistance to parents and teachers. The style is easy and surprisingly absorbing.

Surgery of the Eye: Injuries, by Alston Callahan, B.A., M.S., M.D., F.A.C.S., Professor of Ophthalmology, Medical College of Alabama, Director Thigpen-Cater Eye Hospital, Birmingham, Ala. Published by Charles C. Thomas, Springfield, Ill., 217 pp., indexed, illustrated with numerous photographs and color plates. Price $11.50.

This masterfully prepared book can hardly be intended to serve the man in general practice beyond giving him adequate understanding in handling injuries of the eye. The work is limited exclusively to surgical repair of injuries to the eye and adnexa, and thus becomes a textbook on certain methods in solving deformities resulting from typical injuries.

Dr. Callahan's work is based on experience covering three thousand cases presented in an army ophthalmic center. He says, "The destructiveness of modern warfare and the advances of medicine have produced different injuries and severer deformities." He also acknowledges the uses of tantalum and acrylic resin and other new materials developed in very recent years.

Methods of determining injury, removing cataracts, a luxated lens, intraocular foreign bodies; delicate reparative procedures, transplants, eyebrow reconstruction, and reconstruction of the orbit are but a few of the operations dealt with and illustrated by preoperative photographs, surgical drawings and end-result photographs. He thus permits the reader to evaluate results for himself.

Most appreciated by the specialist, this work is concise, clear, and thoroughly instructive.

Freud: Dictionary of Psychoanalysis, by Nandor Fodor and Frank Gaynor. Published by the Philosophical Library, New York. Price $3.75.

This little book of 208 pages brings to the doctor's desk a complete glossary of all the basic terms in psychoanalysis as defined and explained in the words of Dr. Sigmund Freud, founder of the school of psychoanalysis.

A genuine storehouse of information for the layman, this volume is at the same time an extremely convenient and useful reference work for the psychologist, psychiatrist, and psychoanalyst.

The editors: Frank Gaynor is the co-author of the well-known **Dictionary of Industrial Psychology**. Nandor Fodor, an internationally known psychoanalyst, is a graduate of the Royal Hungarian University of Science, an Associate of the Association for the Advancement of Psychotherapy in the U. S., and a member of the New York Academy of Science.

STATE BOARD OF HEALTH

FELIX J. UNDERWOOD, M.D.

FIELD TECHNICAL SERVICES

The Field Unit, composed of a small, mobile, advisory staff, has been functioning since 1931. It is today an integral part of the Division of Local Health Work and has an excellent record of service in the development of full-time health departments throughout the state. Its primary responsibilities have been to provide guidance and supervision to local health units, bringing about closer liaison with the central office, standardization of procedures and records, and a better coordination of all health facilities.

According to established policy, members of the Field Unit staff visit each local health department routinely to assist in program planning, improve quality and quantity of service, encourage uniform practices, and stimulate in-service education. Staffed by a medical director, five nursing consultants, three sanitation supervisors, two public health engineers, and five advisory clerks, the Field Unit is equipped to serve the counties effectively in achieving better technical services. The Mississippi State Board of Health was one of the first states to prepare a **Record Manual** and a **Manual of Procedure** for the use of the local health departments. These have proved extremely useful guides in establishing uniform procedures throughout all counties and in acquainting new personnel with policies to be followed. Both of these publications were completely revised and distributed to all counties in January, 1950.

In addition to routine work, the Field Unit has undertaken a number of special projects and studies. The demonstration nurse-midwife program in Jones County was studied and a report made of its effectiveness. The home delivery nursing service begun some ten years ago in Pike County was evaluated to determine the advisability of continuing this phase of the program. A time-cost analysis was conducted over a 4-week period in Pike County to determine cost in time and money of specific services. In order to develop a more effective method of handling the increasingly heavy case load of tuberculosis in the state, two types of visible registers were prepared and tried experimentally in Rankin and Jones counties. After a trial period, merits and weaknesses of the two registers were studied and a file embracing the best features of both was developed to be put into use in the state.

By use of the evaluation schedule recommended by the American Public Health Association, the programs of 16 counties were studied. The local staff, assisted by a field technical unit team, collected, analyzed and discussed the information found, thereby making the evaluation an educational experience in planning and renderig service. Field unit members have stimulated and participated in organized staff education and on-the-job training through institutes, group conferences, seminars, workshops and field visits. Recently, monthly in-service training conferences have been held on a district basis, permitting personnel of a majority of the health departments to participate. This plan has also been extended to include conferences for sanitation supervisors and clerical workers. In these periodic regional conferences a projected program is planned in order to study thoroughly certain current problems.

Evaluation studies of county health department programs are made periodically in order to determine any weakness in the program, where emphasis should be placed, and also to determine those phases of the program which may be over-emphasized and need to be balanced with other services. Through such a general review of the program, it is possible to develop a greater appreciation of the importance of team work and to integrate all of the services in the county health departments.

Orientation and training of new personnel receives considerable attention from the Field Unit staff. During the biennial period ending June 30, 1949, eleven health officer trainees received orientation and experience at the Lauderdale County Training Center and 19 others at different places in the state. Fifty sanitarians, under the guidance of a Field Unit public health engineer, spent 2 months each at the center attending classes, performing supervised field work and learning state regulations and policies. The completely reorganized clerical training regime, under supervision of a field unit clerk-teacher, has given to 17 clerks detailed instruction and experience in health department clerical responsibilities during the biennium. Advisory nurses work closely with the nurse instructor in orientation of newly employed nurses and follow-up with individual supervision in the working area.

More recently, it has been found effective to give orientation and training in other well organized health departments in the state for a number of health officers, nurses, and venereal disease investigators.

During the past year, services in the mental hygiene program have been emphasized through the holding of mental health institutes for employees in the county health departments and the central office of the State Board of Health. These in-service training institutes are provided for administrative workers in order that they may better appreciate mental hygiene in carrying on their service programs.

The Field Advisory Sanitation Supervisors have been emphasizing through the local health departments the importance of having all school lunch rooms meet basic requirements in sanitation in order that they might be accredited for state aid. Great improvement has been made in the school lunch room sanitation as well as in the general sanitation of the schools.

The Field Unit Advisory Clerical Staff has continued to set up visible tuberculosis registers in county health departments as rapidly as time permits. These visible registers have been enthusiastically received in those counties where they have been established, for through this means it is possible for the nurses and the health officers to more intelligently keep before them the tuberculosis problem as it exists.

Dr. H. B. Cottrell, Assistant Director of Local Health Services, and Supervisor of Field Technical Services, resigned March 1, 1950, to accept an appointment as a Senior Surgeon with the United States Public Health Service. His wide knowledge and experience gained in Mississippi will be used to advantage to further the work of the Public Health Service in all states, and Mississippi feels that it is not losing altogether the services of this valued public health worker, but is sharing them. His successor is Dr. Andrew Hedmeg, an experienced local health officer who relinquished his post as Harrison County Health Officer to continue the important work of the Field Unit.

NEW BOOKS IN THE LIBRARY

1. Cooper, Barber and Mitchell—*Nutrition in Health and Disease,* 11th ed. Lippincott, 1950.
2. Pohl, J. F.—*Cerebral Palsy.* Bruce Publishing Company, 1950.
3. Zahorsky, J.—*From the Hills,* an autobiography of a pediatrician.
4. Eastman, N. J.—*Williams Obstetrics,* 10th ed. Appleton-Century, 1950.
5. Berens, C.—*The Eye and Its Diseases,* 2d ed. Saunders, 1949.
6. Pullen, R. L.—*Communicable Diseases.* Lea and Febiger, 1950.
7. Campbell, W. C.—*Campbell's Operative Orthopedics,* 2d ed. Mosby, 1949.
8. Rolnick, H. C.—*The Practice of Urology.* 2 vols. Lippincott, 1949.
9. Curtis, A. H. and Huffman, J. W.—*A Textbook of Gynecology,* 6th ed. Saunders, 1950.
10. Duvall, E. M.—*Family Living.* Macmillan, 1950.
11. Dubos, R. J.—*Louis Pasteur,* Free Lance of Science. Little Brown and Company, 1950.
12. James, William—*The Principles of Psychology.* Dover Pub., 1950.
13. Hawley, P. R.—*New Discoveries in Medicine,* Their Effect on the Public Health. Columbia University Press, 1950.
14. Wall, F. P. and Zeidberg, L. D.—*Health Guides and Guards,* 4th ed. Prentice-Hall, 1949.
15. Sperry, W. L.—*The Ethical Basis of Medical Practice.* Hoeber, 1950.
16. Fulton, J. F.—*Physiology of the Nervous System,* 3d ed. rev. Oxford Univ. Press, 1949.
17. Puffer, Ruth R.—*Practical Statistics in Health and Medical Work.* McGraw-Hill. 1950.
18. Thomson, Elizabeth H.—*Harvey Cushing,* Surgeon, Author, Artist. Henry Schuman, Inc., 1950.
19. Hurlock, Elizabeth B.—Child Development, 2d. ed. McGraw-Hill, 1950.
20. Hurlock, Elizabeth B.—*Adolescent Development.* McGraw-Hill, 1949.
21. Selye, Hans—*Stress.* Montreal, Acta, Inc., 1950.
22. Kanner, Leo—*In Defense of Mothers.* C. C. Thomas, 1941.
23. Rennie, T. A. C.—*Vocational Rehabilitation of Psychiatric Patients.* Commonwealth fd., 1950.
24. Kellogg Foundation—*An Experience in Health Education*—Kellogg fd. 1950.
25. Peale, N. V. and Blanton, S.—*The Art of Real Happiness.* Prentice-Hall, 1950.
26. Werminghaus, Esther A.—*Annie W. Goodrich,* Her Journey to Yale. Macmillan, 1950.
27. Bunting, R. W.—*A Textbook of Oral Hygiene and Preventive Dentistry.* Lea and Febiger, 1950.
28. Monographs of Society for Research in Child Development—*Handbook of Measurement and Interpretation of Height and Weight in the Growing Child.* Child Development Publications, 1950.
29. Ehlers, V. M. and Steel, E. W.—*Municipal and Rural Sanitation,* 4th ed., McGraw-Hill, 1950.

JACKSON UROLOGICAL CLINIC

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INTERPRETING MEDICAL LITERATURE

PEDIATRICS

THE EFFECT OF MILK SUPPLEMENTS ON THE GROWTH OF CHILDREN WITH NUTRITION FAILURE—Tom D. Spies and Samuel Dreizen, Hillman Hospital, Birmingham, Ala.—Journal of Pediatrics 34:393-413, April, 1949.

"Eighty-two children were paired on the basis of history or evidence of nutritive failure, sex, roentgenographic analyses of the hand, wrist and forearm, phase of growth, general body type, freedom from contagious or infectious disease and allergy to cow's milk, accessibility of the home and cooperative attitude of the parents. One child in each pair was given a supplement equivalent to one quart of either reconstituted whole milk (4¼ ounces of milk solids) or reconstituted nonfat milk (3 ounces of milk solids) each day, six days a week, for a period of twenty months.

Twenty-two children (9 boys and 13 girls) received the nonfat milk, while 19 children (9 boys and 10 girls) received the whole milk. No changes, except those which were completely voluntary, were made in the routine of the children other than the addition of the milk supplement to the daily dietary of one child in each pair. Each child, with the exception of one child in the control group, was studied for an additional twelve months after the supplement was discontinued.

This report is concerned with the growth progress of both groups of children during the milk and postmilk phases of the investigation, as measured by the Wetzel Grid. The findings include only those derived from the individual child in each pair rather than from each pair as a single unit. It was found that 73 per cent of the children who received the milk supplement improved in their rate of development, 54 per cent improved in their speed of development, 34 per cent improved in their direction of development, and 27 per cent improved in their quality of growth during the supplementation phase of the study. In contrast, 39 per cent of the control children improved in their rate of development, 7 per cent in their speed of development, 15 per cent in their direction of development, and none in their quality of growth while on the milk supplement continued to do so when the supplement was withdrawn.

The number of children involved was too small to render a distinction between the relative effectiveness of the whole and nonfat milk supplements on the basis of the Grid data alone. The Wetzel Grid proved to be a useful method for measuring certain changes in the growth progress of children with chronic nutritive failure when a known amount of milk was added to their daily dietaries. The growth of each child, however, is a phenomenon specific for that child. Such aids as the Wetzel Grid must be interpreted in the light of the sum total of information which can be acquired from the large variety of factors which influence growth progress."

COMMENT: This article is given for study and due consideration. The authors in this case are outstanding, and their contribution to scientific evaluation of nutritional elements in the past has been wonderful.

ANNOUNCEMENT

The Institute of Industrial Health of the University of Cincinnati will accept applications for a limited number of Fellowships which are being offered to qualified candidates who wish to pursue a graduate course of instruction which will qualify them for the practice of Industrial Medicine. Candidates who complete satisfactorily the course of study will be awarded the degree Doctor of Industrial Medicine. Requests for additional information should be addressed to the Institute of Industrial Medicine, College of Medicine, Cincinnati 19, Ohio.

Woman's Auxiliary

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"Today's Health"	Mrs. Richard Clark	Hattiesburg
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History and Archives	Mrs. Harvey Garrison, Sr.	Jackson

AUXILIARIES SETTING UP PROGRAMS

At the September meeting of the Northeast Mississippi Auxiliary, which met at the Christian Church in Amory on September 12, members adopted the agenda of the year and set about their accomplishment under the leadership of the president, Mrs. L. B. Morris of Macon. The group agreed to consider a nurse student loan, and undertook the survey of old age indigent and nurse personnel in the fourteen counties. Dr. Bourland, local physician, brought interesting discussion and slides of his travels in Europe the past summer. He made special comment on his observations of socialized medicine.

Amory doctors' wives regaled the guests with a beautifully appointed tea.

* * *

The Washington County Auxiliary resumed its monthly meetings with a luncheon at one o'clock in Greenville on September 15, with the president, Mrs. N. A. Bologna, presiding. The group adopted work for the year as suggested by the state president.

* * *

In a delightfully planned afternoon meeting members of the Central Medical Auxiliary gathered at the Fagan Parlors for the first meeting of the fall on October 3. Mrs. A. J. McIlwain, president, presided, and presented the state president, Mrs. W. H. Anderson, who urged doctors' wives to strive in all their activities to build up good will for the medical profession.

An exquisitely appointed tea table held a collation of dainty sandwiches and sweets and a choice of coffee or fragrant hot punch.

* * *

Members of the Delta Medical Auxiliary gathered in Belzoni on October 11 for an excellent meeting presided over by Mrs. J. A. Clark, Jr., of Ruleville. The group agreed to break the organization up into county units, that more doctors' wives may be reached and meetings more frequent. Mrs. W. H. Anderson, the state president, urged the members to concentrate on their particular community problems, that a better public attitude may be promoted toward the medical profession.

At the lovely home of Mrs. T. J. Barkley the members were entertained most graciously with tea. The table appointments, the superbly fashioned sandwiches and sweetmeats, a wealth of cut flowers all conspired to make the hospitality one of unforgettable pleasure. Mrs. W. A. D. James of Midnight and Mrs. J. C. Bell of Belzoni presided at either end of the table, one at the coffee service, the other pouring tea.

New officers elected for the coming year for the Delta Auxiliary are: Mrs. J. A. Clark, Jr., president; Mrs. Toxey E. Hall, Belzoni, president- elect; Mrs. John Graves, Leland, vice-president from Washington County; Mrs. S. W. Colquitt, Sunflower, vice-president from Sunflower County; Mrs. E. M. Meek, Greenwood, Leflore County; Mrs. W. A. D. James, Midnight, Humphreys County; Mrs. W. D. Fitzgerald, Cleveland, Bolivar County.

* * *

The following day, October 12, the Coast Counties Medical Auxiliary met at the White House Hotel for a delightful luncheon inaugurating the year's activities. A lovely summer day found charming emphasis in tropical fruits and flowers in stylized arrangements gracing the luncheon table. Mrs. E. A. Trudeau, Biloxi, presided, presenting Mrs. Augustus Street, Vicksburg, immediate past-president, Mrs. George Owen, Jackson, president-elect, and Mrs. W. H. Anderson, Booneville, president, of the state organization. Each brought messages for direction in the year's work.

Nosebleed and Its Management*

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BLEEDING from the nose, as a rule, ceases spontaneously no matter what treatment is instituted, but when it persists, a serious degree of anemia and occasionally death may ensue.

Epistaxis should be classified as a relative emergency. Wood in discussing Woodson's[1] paper on epistaxis stated that he never rushes to see a patient who has epistaxis because if enough time has elapsed about 80 per cent of them will check themselves.

Nasal hemorrhages are seldom due to deficiencies in the clotting mechanism of the blood but rather to a leak in the side of a vessel. It often bursts open like a budded flower. Such a lateral leak does not tend to close but to gape, even if there is enough smooth muscle left in the vessel to contract. One can readily see then, that especially among older people, the bleeding tends to repeat itself for about two weeks. It probably takes about that long a time for scar tissue to form and obliterate the vessel permanently.

Anatomy

A knowledge of the anatomy of the blood supply of the nose is of practical advantage in deciding which method to employ in the treatment of the hemorrhage and in determining the possible length of hospitalization and possibility of recurrence. The arterial blood supply of the interior of the nose is derived from both the internal and the external carotid arteries. The first branch of the internal carotid after it leaves the carotid sinus (the ophthalmic artery) and branches of the external carotid artery (the internal and external maxillary arteries) participate in supplying the blood. Only the principal branches will be described herein.

The sphenopalatine artery, the terminal branch of the internal maxillary artery, is the direct source of arterial blood in the nasal fossa and its appendages.[2] It reaches the nasal cavity through the sphenopalatine foramen, located on the lateral nasal wall near the posterior end of the superior nasal meatus. Immediately after entering the nasal fossa, the artery divides into a medial and a lateral branch. The lateral branch spreads forward over the turbinates, the meatuses, the maxillary and ethmoid sinuses and anastomoses with the posterior ethmoidal artery of the internal carotid system and with branches of the external maxillary artery of the external carotid system.

The medial branch of the sphenopalatine artery, called the "nasopalatine artery," crosses the undersurface of the body of the sphenoidal sinus, enters the septal wall and spreads anteriorly and inferiorly over the septum.

The descending palatine artery arises from the internal maxillary artery, descends through the pterygopalatine canal, passes through the hard palate, enters the nasal cavity by way of the incisive canal and leads on through the nasal septum. The pharyngeal artery, also a branch of the internal maxillary, goes to the roof of the pharynx and from there gives off branches to the posterior and superior portions of the nasal fossa and the sphenoidal sinuses.

The anterior and posterior ethmoidal arteries arise from the ophthalmic artery as it passes along the medial wall of the orbit. The branches of the anterior ethmoidal artery enter the nasal cavity along the side of the crista galli and spread downward over the anterosuperior part of the nasal cavity and the adjacent sinuses and over the anterior part of the septum.

The posterior ethmoidal artery enters the nasal cavity through an aperture in the cribriform plate, spreads over the lateral nasal wall, the posterior ethmoidal cells and the upper part of the septum and anastomoses with branches of the sphenopalatine artery of the external carotid system. The posterior ethmoidal artery is much smaller than the anterior ethmoidal artery.

The external maxillary artery (facial artery) supplies blood to the anterior portion of the septum through the septal branch of the superior labial artery.

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*Read at the meeting of the Mississippi State Medical Association, Jackson, Mississippi, May 9 to 12, 1950.

There is relatively free anastomosis between the adjacent branches of the external carotid artery of the same side and with the corresponding branches of the opposite side. Johnson and Foster[3] have estimated that collateral circulation is established within five days after ligation of the external carotid artery. The final distribution of these vessels is found in the mucoperiosteum in three layers of capillary networks: one deep in the periosteum, a second surrounding the glands and a third just beneath the epithelium. The paranasal sinuses receive an additional supply of blood through the outer bony wall.

Etiologic Factors

The determination of the causes of epistaxis is at best an inexact study, but they can roughly be divided into local or primary conditions, and general or secondary systemic conditions. Local causes are: 1) trauma from surgical procedures or picking the nose, the latter is the most common cause of nosebleeding in childhood; 2) acute and chronic infections in nose; 3) traumatic septal perforation with repeated small hemorrhages from the margins where cartilage is exposed; 4) neoplasms which also often cause many small hemorrhages, sometimes for months and 5) hereditary hemorrhagic telangiectasia. In the last there is here a hereditary defect of the capillaries characterized by minute stellar vascular ramifications in the skin and the mucous membrane. Rutin has been of some benefit.

General and systemic indirect causes are: 1) hypertension and arterial changes, such as in arteriosclerosis and other chronic debilitating diseases; 2) high venous tension, such as in emphysema, bronchitis, whooping cough, mitral stenosis and tumors of the neck; 3) diseases of the blood especially leukemias, pseudohemophilia and true hemophilia; 4) cardiac disease and rheumatic fever especially in childhood and 5) sudden high altitudes such as in flying. Nosebleeds are most frequent between early childhood and puberty but are most often not serious in that period of life.

Immediate Measures for Epistaxis

When a physician is called to see a patient who has nosebleed, the relatives should be told not to put the patient on his back. If the patient lies on his back, the stomach fills up with blood, and the patient feels faint and nauseated. If the patient must lie down, he should lie on his stomach; it is preferable, however, for him to sit up and bend forward. If the patient is at home, he should blow out the clots and then an attempt should be made to identify the bleeding point and stop the bleeding with the means available. If the bleeding comes from anterior septum vessels, pressing the anterior nerve together for 5 minutes might be sufficient.

Our Series of 106 Cases in Which Hospitalization Was Necessary

From 1930 through 1946, 106 patients who had severe epistaxis have been treated in the hospitals in Rochester. Part of the data on these patients has been published elsewhere previously.[4] Of the various causes of the hemorrhage in these cases, listed in table 1, only trauma to the nose, either accidental or surgical, was considered a direct cause of nasal hemorrhage. The other causes are not considered as being more than contributory. Trauma figured in only 8 per cent of the cases while in nearly all the remaining cases the nosebleed began when the patient was asleep or at rest.

TABLE 1

Causes of Epistaxis: Analysis of 106 Cases

Cause	*Cases*	*Per Cent*
Cause undetermined	29	27
Hypertension and arteriosclerosis	19	18
Hypertension without arteriosclerosis	14	13
Arteriosclerosis without hypertension	10	9
Trauma	9	8
Familial hemorrhagic telangiectasia	6	6
General debility	5	5
General debility	5	5
Previous operation	4	4
Malignant lesion	1	1

Disregarding nosebleeds in children and young adults which are seldom very severe, one sees from table 2 that severe epistaxis is essentially a geriatric problem, the incidence increasing directly with the age. The most common causes of nosebleed in our cases were conditions which become progressively worse as the patient grows older. Of all patients studied, 41 per cent had either hypertension

TABLE 2

Age Distribution

Age, yr.	*Cases*	*Per Cent*
Less than 5	2	2
5-14	3	3
15-24	7	6
25-34	6	5
35-44	20	19
45-54	17	16
55-64	25	24
65 and more	26	25

or arteriosclerosis or both. Forty per cent of our patients were more than 60 years of age. Of those past 60 years of age, 60 per cent had hypertension.

In 29 cases, no obvious cause of hemorrhage was found and a diagnosis of cardiovascular disease had not been made previously. Nearly all of these patients, however, were in the age group in which cardiovascular disease is common.

Few textbooks and papers on nosebleed do more than mention the Little or Kiesselbach's area as the source of serious nosebleed. In most this area is dismissed as being of nuisance value only. This area was the source of the bleeding of half of our patients who required hospitalization, however. It is not surprising to those who routinely have to treat nosebleed that anterior septal bleeding can be so severe that hospital apparatus is required for its control. Three out of 5 patients more than 60 years of age bled from this source.

Nearly a third of all patients (table 3) bled from high and posterior portions of the nose; the sphenopalatine or nasopalatine artery was the source of about half of these hemorrhages. Trauma incidental to packing the nose prior to hospitalization was found to be a considerable factor in those cases in which bleeding was from the turbinates or diffusely from the nasal membranes.

TABLE 3

Source of Bleeding

Source	*Cases*	*Per Cent*
Anterior portion of the septum	54	51
High or posterior part of nose		
Sphenopalatine or nasopalatine artery	20	19
Undetermined	13	12
Diffuse bleeding	14	13
Turbinates	5	5

Five deaths occurred among the cases reviewed. One was attributed to coronary occlusion, another, that of a child, 2½ years old, was due to disease of the blood-forming organs. The other deaths were due respectively to hemorrhage from esophageal varices, pulmonary hemorrhage secondary to bronchiectasis and overwhelming toxicity secondary to scarlet fever.

Treatment in Hospital

The severity of nosebleed may vary from a slight dripping of blood to a fatal hemorrhage, and the treatment must be applied accordingly. Whatever the cause or source of the hemorrhage, the principal object in the treatment is to stop the flow of blood as soon as possible.

On admission to the hospital the patient first should be examined for symptoms of shock and for active bleeding. If the patient is an adult, he is given 1/6 to 1/4 grain (0.01 or 0.016 gm.) of morphine by hypodermic injection. With close observation of the patient it is not difficult to distinguish between shock due to hemorrhage and the shocklike appearance of a patient who is nauseated from swallowing too much blood. If there is uncertainty as to the condition of the patient, transfusion of blood should be employed. Group O blood should be available for immediate use.

If the hemorrhage is controlled by packs inserted prior to hospitalization, the packs are left in place and the patient is watched thereafter for recurrences of bleeding.

If there is active bleeding all packs, if any, are removed and the nose is quickly cleansed with a suction apparatus under direct vision to determine the source and severity of bleeding. Cotton pledgets moistened in equal parts of 1:1,000 solution of epinephrine chloride and 10 to 20 per cent solution of cocaine are then used to shrink the nasal mucous membrane and provide local anesthesia for any necessary instrumentation. One-inch (2.5 cm.) gauze heavily covered with petroleum jelly is probably the most useful agent available to the rhinologist for the control of nasal hemorrhage. Large spurting vessels do not respond well to chemical cautery and posterior spurting vessels are inaccessible to the electrocoagulating point. A short strip of petroleum gauze carefully and firmly packed over the bleeding point controlled hemorrhage in 80 of the cases of nosebleed in our series (table 4).

TABLE 4

Treatment Used in Controlling Epistaxis

Treatment	*Cases*
Nasal packing	38
Nasal packing and cautery	23
Nasal packing, cautery and transfusion	19
Chemical cautery only	7
Electrocoagulation only	5
Submucous resection	2
Injection of foreign protein	1
Transfusion and ligation of external carotid artery	11

If anterior packing alone fails to stop the flow of blood, postnasal packing should be employed without hesitation. Dickie[5] in his paper on nasal hemorrhage and its treatment has a description of an effective postnasal pack. The following is his description of it: A strip of gauze about 2½ to 3 inches (6.3 to 7.6 cm.) wide is folded lengthwise 1 inch from the edge. It is then rolled up tightly until the thick end is about ¾ inch thick. It is bound tightly around the middle with a string leaving the ends long. The ends are wound criss-cross round the thinner end and tied tightly. One end of the string may be cut off to about 4 to 5 inches and the other end left long. A catheter is passed through the nose and pulled out the mouth. The long end of string then is tied to the catheter and the pack is pulled into place. In order to maintain steady pull the string in front should be tied to large rubber tubing. If the bleeding still is not controlled petroleum gauze can be packed against the site of bleeding and against the postnasal pack.

This postnasal pack, in my opinion, has many advantages over other types: 1) it causes less discomfort to patient; 2) in most cases it does not block the eustachian tubes and 3) it can be left in place for several days without too much discomfort.

However, in order to prevent infection, all patients who have postnasal packs in place should have penicillin; we usually give 300,000 units daily.

Neivert, Engelberg and Pirk[6] found a high incidence of ascorbic acid and prothrombin deficiency in a series of 104 consecutive cases of epistaxis. The gratifying clinical results attending the administration of 300 mg. of ascorbic acid daily and vitamin K-like substances in some of these cases suggest that vitamins C and K have a definite place in the management of nasal hemorrhage. However, the follow-up of these works was unsatisfactory. Older patients with severe nosebleeds are often given rutin and ascorbic acid even when examination of the blood shows normal conditions.

Topical application of thrombin and thromboplastin are often useful in diffuse bleeding from the mucous membranes for patients who have blood dycrasia, especially the acute leukemia. The noses of patients who have diffuse bleeding from the membranes should not be packed because the packing will traumatize the membranes further. Use of epinephrine in an atomizer is sometimes useful.

Since about 1947, use of oxidized cellulose gauze packing has been advocated in many articles.[7, 8, 9, 10] The nose, however, should not be packed tight with it because it causes necrosis of the mucous membranes, but small amounts should be used directly over the bleeding area.

When conservative measures fail, ligation of a main artery should be employed. Ligation of a principal artery for the control of hemorrhage from one of its branches was first performed more than 150 years ago. According to Bartlett and McKittrick[11] who reviewed all cases of ligation of the carotid artery up to 1917, Abernathy[12] attempted without success to tie off the common carotid artery for hemorrhage in 1795. The first successful ligation of the common carotid artery was reported by Flemming[13] in 1803. Since that time the carotid artery has been ligated hundreds of times for a variety of conditions including nasal hemorrhage.

Ligation of the external carotid artery alone has been more limited. McKnight[14] in 1926, reviewed the literature and found 17 instances of ligation of the external carotid artery for nasal hemorrhage up to that time. In all the hemorrhage was controlled successfully. Of these 17 cases, 2 were cases of spontaneous epistaxis reported by Jackson[15]. McKnight did not mention the case reported by Hyde[16], who successfully tied off the external carotid artery for idiopathic nasal hemorrhage in 1925.

Goodyear[17] in 1937 and Macbeth[18] in 1948, described cases of ligation of the anterior ethmoidal artery for nasal hemorrhage. Macbeth stated that the middle turbinate is a convenient landmark whereby we may determine the ultimate source of bleeding. It is usually possible to determine whether the bleeding originates from above or below this structure in front of it or behind it. When bleeding is severe and packing has failed, either the external carotid or the anterior ethmoidal artery should be tied. The incision for the latter procedure is along the eyebrow. The artery can either be tied or compressed with a silver clip. The posterior ethmoidal artery is usually very small and should not cause much trouble.

Septal bleeding behind spurs and deflections can be difficult to control. In such cases submucous resection should be performed so that the surgeon may see the bleeding point and treat it effectively. Often in these cases the submucous resection alone is enough to control the bleeding.

Ligation of the external carotid artery is indicated when the nasal hemorrhage persists and recurs with severity and the level of the hemoglobin and the number of erythrocytes drop steadily in spite of repeated nasal packing and transfusion of blood.

It is not safe to wait until the patient has lost so much blood that a state of shock supervenes. Bean[19] in 1937, reported that in 2 of 300 cases of coronary occlusion the occlusion was caused by the sudden fall of blood pressure accompanying hemorrhage, in 1 of his cases spontaneous epistaxis had occurred. McKinlay[20] described a case in which coronary insufficiency was precipitated by hemorrhage from a duodenal ulcer. McLaughlin and others[21] reported a similar case in 1940.

Blumgard and others[22] found that coronary occlusion was due to shock in 11 out of 350 cases. They emphasized the importance of preventing a fall of blood pressure in persons who have coronary sclerosis under any circumstance.

Eleven patients in our series failed to respond to conservative treatment and required ligation of the external carotid artery (table 5). Two of these had minor infections of the wound after operation on the sinuses and a third needed tracheotomy because of laryngeal edema secondary to wound infection. In each instance the bleeding was controlled. In the remaining cases the epistaxis occurred spontaneously although in 4 of the cases a diagnosis of hypertension had been made previously. In 1 case (case 11, table 5) in which the diagnosis of generalized arteriosclerosis including the coronary vessel had been made several years previously, pericardial pain and symptoms of shock developed at the time of admission. An electrocardiographic tracing showed evidence of occlusion of a coronary artery. The patient failed to respond to treatment adjusted to combat both the cardiac lesion and the state of shock. The left external carotid artery was ligated with the patient under local anesthesia, and the hemorrhage was controlled. The patient died several hours later apparently from coronary occlusion.

TABLE 5

Ligation of the External Carotid Artery for Nasal Hemorrhage

Case	*Age, yr.*	*Contributory factors*	*Source of bleeding, artery*	*Hemoglobin, gm.*	*Erythrocytes per cu. mm.*
1	53	Sinus operation	R. sphenopalatine	8.2	2,700,000
2	60	Hypertension, group 3	L. sphenopalatine	7.0	2,000,000
3	31	Sinus operation	R. sphenopalatine	10.8	4,000,000
4	38		L. sphenopalatine	12.7	
5	50	Hypertension, group 2	L. sphenopalatine	6.7	3,900,000
6	54	Hypertension, group 3	L. sphenopalatine	10.8	4,000,000
7	51		L. nasopalatine	8.0	2,900,000
8	51		R. sphenopalatine		
9	61	Hypertension, group 4	R. sphenopalatine	7.0	2,500,000
10	62		R. sphenopalatine	6.4	1,800,000
11	70	Generalized arteriosclerosis	L. sphenopalatine	10.0	3,500,000

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Modern Prenatal Care

I

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THERE are 150,000 babies lost yearly in the United States, and 10,000 mothers. Seventy-five per cent of these women are delivered by the general practitioner. The responsibility for reduction in mortality in these two groups consequently rests to a large degree upon men in general practice.

Prophylaxis is of value before pregnancy ensues. Detection and treatment of diseases of the heart, lungs, kidneys, hypertension, obesity, venereal disease, thyroid and malnutrition will lower mortality in both groups.

In the routine care of the pregnant woman a thorough study should be made beginning with the first prenatal visit. The dates of the beginning of the last menstrual period and expected date of delivery are recorded. Inquiry is made as to the family history relative to diabetes, multiple pregnancy, complications of pregnancy. Is there a history of surgery, injuries, important diseases or diabetes in the patient? We are interested in the present history as to any cardio-respiratory, gastro-intestinal, genito-urinary or neuro-muscular conditions.

A thorough physical examination is done to determine any abnormalities of the head, neck, breasts, and heart and lungs, and any orthopedic abnormality is looked for. The abdomen is examined for abnormalities, and later in pregnancy for presentation of the fetus. External and internal pelvimetry may be done at the first visit, but is often best done at the eighth month, especially in primipara. The weight, blood pressure, urinalysis, Wassermann, hemoglobin and Rh determination are recorded on the first visit.

In the subsequent periodic visits the weight and blood pressure are recorded and any headaches, scotomata, vomiting, edema, varicosities, bachache, constipation or vaginal discharges are inquired about. A urinalysis is done and the fetal heart tones and size of the uterus noted. At the eighth month a diagnosis of presentation, multiple pregnancy, blood count and a test for Rh antibodies is done in Rh negative women with Rh positive husbands. Just before term x-ray pelvimetry is done if indicated.

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We are particularly on guard for the early signs of toxemia as evidenced by excessive gain in weight (over one-half to one pound per week), edema, rise in blood pressure, albuminuria, etc., and treat as indicated, generally with diet, restriction of sodium, rest, purgation and diuretics. The importance of toxemia as a cause of maternal death in Mississippi is emphasized by the fact that it caused 76 of the total of 176 maternal deaths in this state in 1947.

TABLE I

	No. of Patients	*Percentage of Patients*
Total	165	100
Glossitis	162	98.2
Diseases of Gums	136	82.4
Cheilosis	5	3.0
Stomatitis	5	3.0
Fatigue	1.15	69.7
Leg weakness and pain	90	54.5
Gastro-intestinal		
	85	51.5
Hypotonia		
General Weakness	74	44.8
Anorexia	73	44.2
Constipation	61	37.0
Dyspepsia and Palpitation	60	36.4
Irritability	53	32.1
Burning of feet	32	19.4
Insomnia	28	17.0

The importance of malnutrition in pregnant women has been recently emphasized by Tompkins of Philadelphia in the presence of the following symptoms in 165 cases.

The type and amount of food, frequency of eating, and ideal weight gain are stressed at the initial visit and again at each subsequent visit. It does little good to hand a printed list to a patient and expect her to follow it. Only by explanation of the importance of an adequate diet by the doctor, and continual checking up on the patient subsequently, can we get anything approaching an adequate intake with these patients. Along with other general instructions (printed) the basic diet should include the following items, in amounts given, daily: milk (1 quart), meat, (2 servings); eggs (1 or more), cheese (1 serving); 4 slices of whole wheat or rye bread: vegetables (2 with one green or yellow vegetable eaten raw); fruits (2, one being a citrus fruit). Cooking with grease is avoided. Supplementary iron, cod liver and Vitamin B-complex should be added. The equivalent of one quart of milk daily ingested is imperative as it supplies 30 grams of protein and all of the calcium and phosphorus needed. There is no substitute for this. Dried skim milk powder is available in most grocery stores very cheap.

As further evidence of the value of an adequate dietary in these patients may I again quote Tompkins (Table II).

TABLE II

Tompkins Studies—Philadelphia

	Control Group (792 Cases)		Research Group (593 Cases)		
	No.	*Percentage*	*No.*	*Percentage*	*% Increase*
Total Baby Deaths	11	1.85	18	2.33	26
Still births	5	.84	9	1.16	38
Neonatal Deaths	6	1.01	9	1.16	15
Prematurity	24	4.16	54	7.07	70
Pre-eclampsia	0	0	12	1.56	—
Eclampsia	0	0	1	0.13	—

These two very interesting groups received identical prenatal care with the exception that the "Research Group" took a diet considered adequate in all respects and were carefully supervised in this. At each visit the food intake was surveyed, and errors in diet corrected. They actually took an excellent diet in consequence. The figures speak for themselves.

Without an adequate diet, especially a lack of protein, complications of pregnancy are definitely increased.

In summary we might list the following:

1. Regular visits from early pregnancy.
2. Emphasis on adequate nutrition.
3. Careful history and physical examination at the first prenatal visit.
4. Limited weight gain—total of 15 to 22 pounds.
5. Appreciation of the fact that the normal blood pressure range is between 90/60 to 120/80.
6. Detection and treatment of anemia — Routine Wassermann and Rh determination.
7. Adequate care of all bleeding during pregnancy.
8. Early detection and treatment of toxemias.
9. Reliable x-ray pelvimetry in questionable cases of cephalo-pelvic disproportion, just prior to term.
10. Type and cross match blood before delivery.
11. A 6 weeks postpartum check up in all cases.

Diet in Pregnancy

II

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THE problem involved in outlining a diet for the pregnant woman is one supplying the ingredients necessary for normal growth and development of the fetus without increasing the weight of the mother over the normal. It is not necessary to "eat for two," but protein (1.5 gm/Kilo), calcium (1.5 gm daily) iron (15 mg daily) and adequate amounts of vitamins and other minerals necessary. They can be supplied by the following diet with the addition of vitamin D and A in which it is deficient.

Normal Pregnancy Diet

Each day include in the diet:
¼ lb. lean meat, poultry or fish
(liver or kidney at least once a week)
1 egg, a serving of cheese or additional meat
1 quart milk
1 of the following:
½ cup navy, kidney, lima, soybeans or dried peas
1½ tbsp. peanut butter
½ cup cottage cheese
Additional serving of meat or egg.

2 or more servings of vegetables, preferably colored
3 servings of fruit (2 citrus and 1 other)
3 slices of 100 per cent whole wheat bread or dark rye bread
1 serving potato
3 tsp. butter or enriched margarine
Small amount of sugar (a tsp. or less) if desired.
Iodized salt is preferable.

Reduction of weight during pregnancy can be carried out without jeopardizing the health of either mother or infant. This involves a simple reduction in calories (fats and carbohydrates) with maintenance of the substances necessary for pregnancy.

Low Calorie Diet for Pergnancy

A diet adequate in all materials excepting calories is assured if the following foods are used each day:
¼ lb. lean meat, poultry or fish
1 egg, a serving of cheese or additional meat
1 quart milk—skimmed
1 of the following:
½ cup of cottage cheese
1 oz. cheese (¼ inch slice)
1½ tbsp. peanut butter
Additional serving of lean meat or egg.

4 or more servings of vegetables, preferably colored (omit peas, corn, potatoes, lima beans, sweet potatoes)
3 servings of unsweetened fruit (2 citrus and 1 other)
3 slices of 100 per cent whole wheat or dark rye bread
½ cup cereal equals 1 slice bread
3 tsp. butter or enriched margarine.

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Avoid foods containing large amounts of sugar, fat or starch.

Weight reduction requires careful supervision on the part of the physician and cooperation on the part of the patient. Since the average weight gain due to the pregnancy is about 18 pounds and since this amount of weight is lost during the first few weeks postpartum a calculation of the amount of gain permitted can be made early in pregnancy. Thus a patient who is 15-20 pounds over her normal weight at the onset of pregnancy and who gains nothing during the pregnancy will lose about 15 pounds after delivery. Should she be grossly overweight she may safely lose more weight if the dietary requirements for normal pregnancy are met.

Rapid weight gains during pregnancy may be due to retention of fluid in the extravascular tissue spaces and may be the earliest sign of a developing pre-eclampsia. Because of this the early detection and treatment of such gains is important. An increase in weight of over one pound weekly should be interpreted as indicating fluid retention rather than fat accumulation. Reduction of dietary salt usually will reverse the process. Foods to be avoided are: canned vegetables, prepared meats (ham, bacon, etc.) butter, salted crackers, pretzels, salted nuts, etc. All food should be prepared without salt and no salt should be added. A fluid intake of 2000-3000 cc. daily is desirable. The use of ammonium chlorid 6.0-9.0 gm daily for 3-5 days followed by a 3-day rest period will aid in reversing the flow of fluid.

Should the rapid weight gain continue and particularly should proteinuria or hypertension appear admittance to the hospital is indicated. Here a controlled regimen directed toward treating the toxemia can be carried out.

Adequate diet and weight control is a fertile field for the practice of preventive medicine. The fetal mortality can be reduced, toxemias of pregnancy may be treated at their onset or even possibly prevented and the end results of obesity (hypertension, arthritis, etc.) avoided.

Vomiting of Pregnancy

III

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THE cause of vomiting of pregnancy is still unknown. This affliction occurs in about half of all pregnancies and may be either very mild or severe enough to cause malnutrition and even death. There is a great psychological factor in many cases, but this cannot account for all of them, and in the very severe cases, dehydration, vitamin and carbohydrate deficiency and acidosis all combine to make the patient's condition more precarious.

In the milder cases of nausea and occasional vomiting, light sedation is usually all that is required. Phenobarbital in tablet form or as the elixir may be used in doses of grains 1½ to 4 per day. Foods which are hard to digest like greasy or fatty foods should not be used. The morning diet should consist of little liquid, usually water or black coffee, toast and jelly, and poached or boiled eggs. Later in the day more liquids can be taken. The patient should be reassured that she will get all right and soon will be eating everything.

In the more severe cases with daily vomiting, loss of appetite, and lack of response to the above treatment, the therapy must be more energetic. More bed rest should be obtained. Usually a nap should be taken after the midday meal. The patient should discuss her home life with the physician, sources of irritation, such as in-law friction, arguments with her husband, money worries, should be brought out, and any help that he can give should be offered in the hope of giving her an insight to her problem. The influence of nervousness upon the function of the stomach should be explained. It should also be explained that the developing child will not be harmed by the prolonged vomiting.

Heavier sedation should be prescribed—either with barbiturates or bromides. Frequent small feedings should be given, especially fruit juices, jellies, dry bread, lean meat, and fresh vegetables. Sometimes if sufficient liquids cannot be taken by mouth, retention enemas can be given.

Intramuscular or intravenous injections of the B vitamins are frequently of use to stimulate appetite and to take the place of those lost in the vomitus. Especially useful is Pyridoxine hydrochloride (vit. B6) in doses of 100-200 mgm. per day.

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In severe cases of vomiting when the patient loses weight rapidly, and cannot retain even liquids, it is necessary to hospitalize her. Heavy sedation is given, sometimes grs. 8 to 12 of a barbituate per day. Intravenous or subcutaneous fluids are given so that the urinary output is 1200 to 2000 cc. per day. Vitamins are usually added to the infusion fluid, which should be 5 per cent glucose in normal saline. Nothing by mouth is given for 24 to 48 hours until the retching is stopped. Then dry feedings and light diet can be started.

Sometimes blood transfusions are of aid in helping these patients to regain their strength.

Occasionally a patient will not respond to any treatment and continues to retch and vomit even when taking nothing by mouth. If slight jaundice appears and urinary output diminishes, it may be necessary to perform a therapeutic abortion to save the woman's life. However, this operation is becoming more rare, as sedation, fluids, and vitamins are being given more freely nowadays.

Clinical Evaluation of X-Ray Pelvimetry

IV

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X-RAY pelvimetry provides a definite aid in the management of obstetrics and in the choice of delivery procedure. Once the technique has been mastered by the roentgenologist, the obstetrician needs little study to evaluate the clinical significance of his findings and apply them to a given case.

Pelvic measurements in the office are still of value, and in a general sense will reveal gross abnormalities. However, it still remains inaccurate, if not useless, to attempt to measure the narrow plane of the pelvis, namely the mid-plane. It is here where moulding will occur, posteriors rotate and transverse arrests be found. Hence it is of value to have an accurate appraisal of the bi-ischial diameters in all questionable pelves. The anterior-posterior sagittal diameters at the mid-plane will compensate on occasion and again, only by x-ray are these measurements available.

In addition to mid-plane diameters, one can obtain an accurate index of the inlet and outlet, the pelvic arch and angle of the sacrum. Any one of these pelvic planes can be expressed in volumetric capacity, universally in cubic centimeters. One then can have some tangible figure of exactly the amount of room present, as far as the pelvic architecture is concerned.

It remains then to learn how large a sphere (the baby's head) must pass through a given measured space. It is in this respect that the knowledge of the volumetric capacity of the fetal head is of utmost value. By compilation, the roentgenologist again can establish the volume of the fetal head. With this figure and a knowledge of the volume of each pelvic plane, the obstetrician can then have some appraisal of what to expect during labor.

In addition, the fetal position altitude and descent of the fetal presenting part can clearly be observed, all adding emphasis on the ultimate outcome. A number of interesting observations have been made. We find that the opportune time for x-ray is at the thirty-eighth week of pregnancy. This allows maximum fetal growth. Should delivery not occur currently, the fetal head will increase in size at an average of 25 cc. per week. This might not be too evident should prepartal moulding occur. Although other factors must be taken into consideration, the maximum amount of disproportion between the fetal head and the mid-plane is generally agreed at 200 cc. In other words, a fetal head will mould to that amount. At the inlet the maximum is in the vicinity of 75 cc. since forces are not directed at the inlet as are present at the mid-plane. In breech delivery where moulding is absent, the limitation, of course, is far less.

One, then, might feel free in some cases to establish a clear-cut indication for Cesarean section devoid of all criticism. Intelligent trials of labor, knowing full well the feto-pelvic picture, can be carried out. The unsuspecting multipara with an average pelvis and a large baby can be spared the false sense of security, just because she happened to have one or two babies from below of normal, average size.

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Caution should be registered by anyone using only the x-ray findings to manage a given situation. X-ray pelvimetry is only a valuable aid. In a number of studies throughout the past few years, we have seen women with as much as 240 cc. mid-plane disproportion, deliver from below. On the other hand we have on record women with as little as 150 cc. disproportion present the necessity for difficult operative intervention at the mid-plane. One must appreciate all the other factors involved in labor and delivery, notably the soft tissues, behavior of the cervix, mechanism and force of uterine contraction, age of the patient, attitude of the fetal head and fetal position. Certainly any one of these factors will present dystocia in the presence of an otherwise normal fetal-pelvic relationship as far as bony architecture is concerned.

And finally, it is unpardonable for any roentgenologist to present a report to the physician stating his opinion as to the feasibility of vaginal delivery, except in the rare abnormally deformed pelves. The report should be one of measurement only, the interpretation of which, like any labor report, should be delegated to the obstetrician himself, who alone can evaluate all the other factors which play such important roles in the ultimate outcome.

Toxemias of Pregnancy

V

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Definition: (Dieckmann) A group of diseases which occur during pregnancy, or the early puerperium, characterized by one or more of the following signs: edema, proteinuria, hypertension, convulsions or coma. (In addition, various cerebral, visual, G. I. and renal symptoms may appear.)

Specifically we refer to pre-eclampsia, and eclampsia, although many other syndromes are included under the general term. However, many of these are not peculiar to pregnancy, and many do not deserve the generic term of toxemia. Hyperemesis, chorea, herpes, etc., will be excluded from this discussion.

Classification: American Committee on Maternal Welfare has divided the so-called toxemias into two main categories: a) those developing during pregnancy and which are peculiar to the pregnant state, and b) those which are independent of pregnancy and may occur during the course of pregnancy, but not because of the pregnancy, and may also occur in the non-pregnant state.

I. Dependent upon and peculiar to pregnancy:
  1. Pre-eclampsia
    a. mild
    b. severe
  2. Eclampsia
    a. convulsive.
    b. comatose.

II. Not peculiar to pregnancy:
  1. Hypertensive disease.
    a. benign (essentially hypertensive)
      (1) mild
      (2) severe (160-110)
    b. malignant
  2. Renal disease.
    a. nephrosclerosis.
    b. glomerulonephritis (acute and chronic).
    c. nephrosis (acute and chronic).
    d. miscellaneous (pyelonephritis).

Classifications are odious but in this instance are useful in planning therapy and offering a prognosis for the present and subsequent pregnancies.

However, all cases cannot be immediately classified with accuracy—detailed study is often required, and in some instances the diagnostic impression must be changed weeks or months after delivery.

Diagnosis: a. Pre-eclampsia. Occurs during pregnancy, usually after twenty-fourth week, characterized by excessive weight gain, and later hypertension, albuminuria and edema of varying degrees.

I. If the case is "mild," the systolic blood pressure will be below 160, and the diastolic below 110. Albuminuria will be less than 6 per cent. Edema will be slight or evident only by excess body weight gain. Usually no retinal changes.

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II. If the case is "severe" the systolic blood pressure will exceed 160 and the diastolic 110. Albuminuria will be in excess of 6 per cent, and edema will be marked. Hypertensive changes will be marked in the retinal arterioles.

Designating cases of pre-eclampsia as mild or severe may be misleading in that eclampsia may supervene in either instance—mild pre-eclampsia may suddenly become eclampsia, without perceptible stage of severe pre-eclampsia, but in general the other severe complications, such as premature separation of the placenta, occur only with severe cases. Again, most cases of mild pre-eclampsia will respond to simple measures instituted early, whereas severe cases are usually refractile to therapy, the blood pressure continuing to rise, even when the edema may have been reduced. Many present symptoms of impending eclampsia, such as headaches, blurred vision, epigastric pain, vomiting, torpor, or irritability.

While few mild pre-eclamptics develop eclampsia or even severe pre-eclampsia, there are no known methods of determining the potentially eclamptic cases among cases of mild pre-eclampsia, so that they all have to be regarded with caution.

a. Eclampsia: Is probably the same disease as severe pre-eclampsia, accompanied by convulsions (or coma).

b. Pseudo toxemias.

(1) Hypertensive disease: Conforms to general usage of hypertensive cardiovascular disease, but a large majority of pregnant women are in an age group below that commonly associated with the term. It occurs more commonly after the third decade of life, often in patients with family history of hypertensive disease. In earlier forms, the condition is frequently confused with mild pre-eclampsia, blood pressure elevations being mild, and at first noted only during pregnancy. Later the disease definitely identifies itself. In the mild form there is no evidence of lowered renal function, and urinary findings are absent, except possibly for a slight trace of albumin. In younger patients heart changes are rarely demonstrable. In the retinal vessels arterial pathology may be demonstrated in the changed caliber of the vessels, or even retinal sclerosis noted. In mild cases, no ocular changes will be seen. The malignant form occurs infrequently, showing rapidly progressing hypertension, with necrotizing arteriolitis shown by typical changes in the ocular fundi and renal decompensation.

(2) Renal disease.

(a) Nephrosclerosis: Hypertension, constant but mild albuminuria, inability to concentrate to 1.020, albuminuris retinitis, and possible eventual renal failure. Lowered renal function often accounts for high fetal death rate.

(b) Glomerulonephritis: History of acute attack, following acute infectious disease. Edema, hematuria, albuminuria, hypertension.

(c) Nephrosis. Rare. Albuminuria, renal failure. No formed elements or blood pressure.

Incidence: Varies with care, diet, climate, etc.

Toxemia: Less than 5 per cent.
Eclampsia: Less than 1 per cent. Most often seen in primiparas.
Toxemias: Pre-eclampsia: 40 per cent.
Hypertensive disease: 50 per cent.
All others: 10 per cent.

Management: (of true toxemias). Only mild pre-eclamptics may have home treatment. All more severe cases are hospitalized.

I. Mild pre-eclampsia: Referred to "toxemia clinic" where:

1. Diagnosis
2. Dietary regulation
3. Correction of anemia, hypothyroidism, etc.
4. Rest
5. Sedation
6. Diuretics, laxatives, frequent revisits.

Existence of eclampsia, severe pre-eclampsia, or non-responding mild toxemia, which may be progressive, calls for immediate hospitalization.

II. Severe pre-eclampsia:

1. Hospitalization, bed rest
2. Low sodium or liquid diet
3. Sedation
4. Diuretics. Intravenous glucose

5. General laboratory workup, kidney function studies.
6. Daily urinalysis and b.i.d. BP determination
7. Accurate 24 hr. intake and urinary output recording
8. Attempt to regulate intake at approximately 3000 cc.
9. Laxatives
10. Eyeground studies by EENT
11. Frequent medical consultation
12. High protein and vitamin intake, transfusion or plasma as indicated
13. Stool examination
14. Induction of labor.

In general it is attempted to allow one week of medical treatment of severe pre-eclampsia, depending upon the condition of the patient. Failure to respond within that period in moderately severe cases indicates necessity of interruption of pregnancy. In more severe cases, as little as 48 hours may be allowed for response to intensive therapy, or the onset of severe complications, as abruptio, retinal detachment, cerebral complications, etc., may force the issue.

Method of delivery: Little trauma as possible, avoiding operative interference as much as possible. Sedation harmful to fetus. In general, the longer the duration of toxemia, the more chance or degree of renal damage, so early interruption is advisable. Veratriin, heparin not used. Magnesium sulfate occasionally used, both orally and intravenously. Optimum dose of ammonium chloride is 12 gms. daily for four days then rest 5 days. May be used intravenously in 5 per cent glucose, but still produces vomiting. Salyrgan 200-400 mg. (2-4 cc.) recently recommended. Digitalis when indicated. Oxygen when indicated. Look for Rh, twins, diabetes, hookworm disease, mold.

Follow FHT.

III. Eclampsia:
1. Isolation in darkened, cool room in delivery unit with good nursing care.
2. Control of convulsions. Mouth gag.
3. Nothing by mouth. Frequently stomach tube indicated.
4. Retention catheter, frequent check of output, urinalysis.
5. Complete laboratory workup.
6. EENT and medical consultation.
7. Frequent oxygen, digitalis.
8. Control of blood pressure, without decreasing urinary outpost. (Magnesium sulfate in 50 per cent solution to 20 cc. daily—original dose 10 cc., then 2 cc. doses.)
9. Stimulate diuresis—intravenous hypertonic glucose without saline, with vitamins added.
10. Temperature, blood pressure, pulse hourly.
11. Match for transfusion.
12. Bowels—enema or magnesium sulfate.
13. Sedation.
14. Watch for complications.
15. Method of delivery.
16. Induction when controlled.

Postpartal eclampsia: The management of postpartal eclampsia is the same as prepartal eclampsia, except that one is not troubled with the complications of labor and choice of method of delivery.

6. **Prognosis** (Chesley et al, Margaret Hague Hospital): Mortality of eclampsia 5-10 per cent. Fetal: 33 per cent.

Recurrence of toxemia in eclamptics: 34 per cent of all term pregnancies; 45 per cent in at least one pregnancy. Recurrent eclampsia 5 per cent. Factors affecting recurrence: Learn all facts of previous pregnancies:
1. Initial blood pressure.
2. Severity of hypertension.
3. Duration of toxemia.
4. Time required postpartally for return to normal.
5. Weight/height ratio.

Unfavorable factors:
1. Over 120/80
2. Average blood pressure in eclampsia over 160.
3. Duration over 1 week.
4. Failure to return by tenth postpartal day.
5. Ratio at follow-up over 2.2 pounds per inch.

One unfavorable: Toxemia: 11.8 per cent.
Two unfavorable: Toxemia: 25 per cent.
Three unfavorable: Toxemia: 67 per cent.
Four unfavorable: Toxemia: 83 per cent.

Outline of the Technique and Safeguards of Home Obstetrics

VI

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(A report from a presentation and demonstration on the Chicago Maternity Center's technique of home delivery.)

THE maternal mortality resulting from obstetrics in the home can be as low as the average mortality obtained in some of our better institutions. The Chicago Maternity Center—primarily a home delivery service—delivered 2,440 patients with one death, a maternal mortality of .08 per cent. The infant mortality for the same period was 3.62 per cent.

Good obstetrics in the home, as in the hospital, depends upon adequate prenatal care and a good fundamental knowledge of labor and its management. Prenatal care should include a complete physical examination, internal and external pelvic measurements, and some laboratory work-up including Rh blood typing, hemoglobin or CBC, and urinalysis; periodic exams, instructions regarding nutrition, weight restriction, and a definite list of articles needed in the home at the time of delivery, among these a stack of newspapers two feet high. At the Chicago Maternity Center, newspapers in a prescribed fashion are used freely on the bed or kitchen table set-up for delivery.

It is not the scope of this outline to go into detail regarding proceedings and technique in home deliveries. However, I shall list some of the pertinent facts that should be observed.

First Stage.

1. Do a complete examination, including urinalysis, as soon as the patient goes into labor. Know condition of mother and condition, position, and presentation of fetus.
2. Do not leave if she shows any signs of toxemia—i. e.—elevated blood pressure, albuminuria, and edema.
3. Do not wait until patient develops all signs of toxemia before starting treatment—start treatment régime as soon as patient manifests one sign.
4. Keep a record on all toxemic patients—including urinalysis, blood pressure, temperature, pulse, and output. If patient seems to get worse or if physician is not equipped to treat toxemia at home, send to hospital. Always sedate before transferring to hospital. MS grains one-sixth to one-fourth is usually advisable.
5. Do not become impatient. If patient is progressing and general condition good, practice watchful expectancy. Remember impatience induces meddlesome obstetrics —thus complications.
6. Always do rectal exams unless in doubt about progress or suspect disproportion.
7. Do sterile vaginal exams on kitchen table when in doubt. Follow definite technique. Evaluate condition of cervix, position, presentation, size of pelvis, and possible disproportion. Never do a vaginal exam in bed; it is usually inadequate and it is difficult to use sterile technique.
8. Do non-sterile and sterile preps on all patients in labor. Non-sterile prep consists of shaving patient, scrubbing perineum, lower abdomen, and thighs with green soap. Then one per cent lysol solution followed by 1:1500 bichloride solution. The sterile prep consists of rescrubbing the same areas with sterile cotton pledgets using the same solutions in succession—the lysol and bichloride solutions being freshly prepared using sterile boiled water and sterile pans. This is done shortly before delivery is anticipated using two pairs of sterile gloves, removing one pair after the sterile prep and catheterization. The other pair is kept on for the delivery.
9. Deliver all primiparas on the kitchen table using two capped and masked attendants, or relatives, to support legs. Multiparas may be delivered in bed unless operative or difficult delivery is expected.
10. Do not depend on supposedly sterile drapes for a sterile field. This gives a dangerous complacent security of sterility. The free movement of the patient usually contaminates drapes. It is far better to depend on cleanliness and antisepsis—the liberal use of one per cent lysol or 1:1500 solution bichloride after the sterile prep. Sterile towels may be placed under hips or over lower abdomen as these can easily

be removed when contaminated. A clean pair of white leggings to knees may be used.

11. Reboil all instruments and gloves that may be needed every six hours.
12. Always have one unit of plasma or ten per cent glucose in distilled water available in the home for emergency use.

Second Stage.

1. Do not pull forceably on the head to deliver the shoulders—clean out baby's mouth and nose while waiting for next uterine contraction and then aid in delivery following normal mechanism.
2. Do not forget to keep in mind the three most common emergencies of the delivery table. They are:
    a. shoulder dystocia
    b. dystocia due to after coming head
    c. postpartum hemorrhage

   In shoulder dystocia, don't get panicky and forcefully pull and twist head. Follow definite maneuvers—tight ring maneuver (DeLee), or unscrewing maneuver used at Coleman Clinic (McMormick). In delivery of after coming head use Weigand—Martin maneuver (safer). If this fails use forceps.

Third Stage of Labor.

1. Slow delivery of child leads to normal and early placenta separation in most cases—thus decreasing the incidence of postpartum hemorrhage.
2. Do not massage uterus until placenta is separated or unless otherwise indicated because of excessive bleeding.
3. Practice early expression of placenta after signs of separation appear.
4. Do not hesitate to remove placenta manually under a septic condition, if having bleeding due to retained placenta, and thus prevent prolonged loss of blood. Do not wait until patient is in precarious condition.
5. Do not forget to catheterize patient—a full bladder may interfere with proper contraction of the uterus leading to excessive bleeding.
6. Never transfer patient in shock without treatment. Treat with morphine sulfate and fluids—then transfer with fluid running in veins. Plasma or blood preferable. To allow patient to remain in shock without treatment leads to anoxia of vital cells with irreversible shock—death.
7. Do not leave patient for even one hour after third stage, because of danger of delayed postpartum hemorrhage.

Anesthesia and Analgesia.

Safest—local block, pudendal block or parasacral block with one per cent procaine. Saddle block may be used if physician is equipped to combat shock and trained in its use. For analgesia—demerol 100 mg. doses repeated judiciously. Seconal grains $1\frac{1}{2}$ to grains 3 may be used at the onset of labor before giving demerol.

General Notes.

1. Bleeding in the last trimester may be serious—always transfer these patients to hospital for examination and treatment. These patients should not be treated in the home. Preëclampsia not responding to treatment should be hospitalized.
2. The use of posterior pituitary extract in the first and second stage is not permissible under any circumstances at the Chicago Maternity Center. Indiscriminate use is very dangerous.

What keeps the cultists going? They have nothing to sell of a basic, scientific nature; therefore they sell themselves by their interest in their patients. Cultists are salesmen, and they are aware that the science of medicine is often over-emphasized in the doctor-patient relationship, with the elimination of the personal touch.

Our graces may be many, our ideals high, our errors not too many; but we must recognize our defects and correct those worthy of improvement. We must learn the art of listening.

Saddle Block Anesthesia

VII

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Saddle block is a term applied to a form of low spinal anesthesia where the effects are confined chiefly to the perineal area. It has been used for a number of years for rectal, gynecological and urologic surgery; and some three or four years ago Adriani introduced it to New Orleans for obstetrical anesthesia.

In the past two or three years saddle block anesthesia has achieved wide-spread popularity, and many articles about it have appeared in both professional and lay journals. Numerous types of anesthetic agents have been employed and all have their adherents. However, in our use, nupercaine has been most satisfactory and thus this paper will concern itself entirely with this drug.

The technique employed by us is a modification of that which was originally described by Adriani. The materials necessary for performing a saddle block are those used in an ordinary spinal anesthetic—a 26-gauge needle, a 22 or 20 sharp beveled spinal needle, a 2 cc. syringe and a 5 cc. syringe. The solutions employed are a 3 cc. ampule of 10 per cent glucose, a 2 cc. ampule containing 10 mgm. of nupercaine (1-200), and a 1 cc. ampule containing 5 per cent ephedrine in 1 per cent procaine solution; a 1 cc. ampule 1:1000 adrenalin may or not be used as left to the discretion of the anesthetist.

The solutions should be carefully prepared before the lumbar puncture is performed to avoid any possible dislodgement of the needle. It is extremely important to follow a set routine in mixing the 10 per cent glucose and nupercaine. Any change in the pH will lower the effectiveness of the latter drug. Thus, the 5 cc. syringe should be washed twice with 1 cc. of glucose and then once with 1 cc. of nupercaine and the solutions discarded. Then the remaining 1 cc. of glucose and 1 cc. of nupercaine are mixed. One-half cc. of adrenalin may be used. This is then ready for spinal injection. The patient is then placed in a sitting position with her elbow on her knees. Then using the procaine ephedrine solution an intradermal wheal is raised over lumbar 3 or lumbar 4 and a lumbar puncture made. When spinal fluid flows freely, the syringe containing the solution is connected and aspiration attempted to assure correct placement of the bevel of the needle in the needle in the subarachnoid space. Only a very little spinal fluid (1/10 cc.) should be brought into the syringe, otherwise dilution occurs and this interferes with obtaining the desired level of anesthesia. The solution is now injected rapidly, not more than two seconds, and the needle withdrawn. The injection should not be made just before or during a uterine contraction because this increases spinal fluid pressure and causes a greater diffusion of anesthesia. The patient should remain sitting for 60 seconds (some anesthetists use 30 seconds and others allow up to 90 seconds) and then is placed in a recumbent position with two pillows under her head. The patient should not move or strain for five to ten minutes after the injection. The blood pressure should be carefully checked and if any marked drop is noted, vasopressor drugs given. With the use of the procaine ephedrine for the initial wheal, this is seldom necessary.

Analgesia is usually established in three to five minutes and should extend upward to a level midway between the symphysis and umbilicus. There is a complete loss of painful uterine contractions. At times the frequency and intensity of the contractions is diminished but this soon wears off unless the saddle block is given too early in labor. Most patients can move their toes and flex their knees with some difficulty. There is a complete loss of sensory function of the "saddle area" and the lower extremities. The bladder must be carefully watched as voluntary urination is inhibited. There is usually some loss of station of the presenting part. Due to the lack of painful uterine contractions, the patient will not use her abdominal muscles to aid delivery unless coached by the physician or nurse. There is a complete relaxation of the pelvic floor which with the diminished voluntary expulsive force tends to retard anterior rotation and molding of the head. About 15 per cent of the patients will develop a transient nausea and vomiting within the first forty-five minutes.

It is extremely important that the injection should not be administered too early in labor as contractions may cease entirely until the effects of the nupercaine have worn off. The cervix should be at least 75 per cent effaced and 6 to 8 cm. dilated in a primigravida, and 4 to 5 cm. dilated in a multigravida. The contractions should be effective and occurring every two to four minutes apart. The presenting part should be at the level of, or below the ischial spines. It is our practice to administer preliminary drug analgesia in the form of barbiturates and demerol as necessary until the proper stage for the use of saddle block is reached.

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One can expect a saddle block to remain effective for two to four hours. At times it may be necessary to administer a gas anesthesia for the final part of the second stage, especially when delivery occurs near the end of effective anesthesia and a forceps delivery is attempted. Patients may complain of slight pain in the upper abdomen or back and a dragging sensation during the period of traction. Inhalation anesthesia can be stopped as soon as delivery is completed as sufficient perineal anesthesia remains for repair of the episiotomy. If labor proceeds slower than expected, there is no contra-indication or danger in repeating the block.

Saddle block has many advantages and is the anesthetic of choice wherein certain precautions are observed. It eliminates the confusion and excitement that occurs with a near precipitous delivery. The patient remains conscious throughout labor and the immediate postpartal period. She is extremely gratified and elated to hear her child's first cry. The child almost always cries immediately due to the absence of use of respiratory depressant drugs and anesthetics. There is less trauma to the fetal head because of the relaxed pelvic floor and abolition of voluntary bearing-down efforts, and thus is the anesthetic of choice for premature deliveries. The danger of aspiration of vomitus is avoided. There is some evidence that saddle block may delay, for a period of time, a premature labor wherein the membranes are intact. In a few instances labor had been delayed long enough for the fetus to reach the stage of viability.

Saddle block should only be administered by a trained anesthetist or physician who will remain in attendance from the time of injection until delivery. A machine for administration of oxygen under pressure should be available at all times. It definitely increases the incidence of forceps deliveries and it is therefore essential that the obstetrician should be skilled in the use of forceps. Due to the relaxation of the pelvic floor and the lack of voluntary bearing-down efforts, the number of persistent occiput posterior positions is markedly increased. Spontaneous anterior rotation is the exception rather than the rule. It should not be used in a breech presentation where the voluntary abdominal effort of the woman is necessary.

One disturbing complication of saddle block is the relatively high incidence (13 to 19 per cent) of post spinal headaches. When severe, they may last up to 10 days time. The etiological factor is not understood and all therapy thus far has been ineffective. This headache only occurs on assuming a sitting position and is completely relieved by the recumbent position.

Saddle block is not the all-inclusive, ideal obstetrical anesthetic to be used in every delivery. It has proved extremely effective and safe where the precautions mentioned above are adhered to, and is a very valuable addition to the various anesthetic agents used in obstetrics.

Outlet Forceps and Episiotomy

VIII

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OUTLET forceps are* being used with greater frequency in normal deliveries. A recent survey of about eighty primiparas delivered showed about one-half had low forceps aid.

By outlet forces we mean that forceps are used with the head lying on the perineum with the biparietal diameter already past the midplane. The obvious advantages are that the use of forceps with episiotomy at this stage, spares the baby's head from considerable pounding and relieves the mother of a prolonged labor.

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General rules concerning catheterization, anesthesia and application of the forceps apply in these low cases. Very little traction is necessary, the head being lifted out with an upward movement of the handles and the blades removed before the head has completely emerged, with completion of its delivery by the Ritgen maneuver, thus sparing the perineum any further distention.

Episiotomy, properly performed, will frequently be all that is needed even when forceps are contemplated. As soon as the firm urogenital diaphragm is severed the head will deliver with one or two pains.

One who performs episiotomy should have a thorough knowledge of the perineal anatomy and its numerous fascial and muscular planes.

There is no question that mid-line episiotomy is the easiest to repair and heals with a better cosmetic result. Where the head is small a mid-line episiotomy is justified, but I have seen these mid-line incisions considerably extended by a large head, even though the greatest precautions were taken.

By and large, the mediolateral incision is the safest. I prefer to make the incision to the right because the rectum is located a little more to the left side.

When incision is made through a greatly distended perineum it should be a little more lateral than usual, since a more medial incision will be closer to the rectal sphincter than it appears.

There are as many ways of repairing an episiotomy as there are operators. We have tried to apply some of Halsted's principles to repair in this region with very satisfactory results. I have not seen any perineum break down since applying these principles.

Fine catgut, such as triple O chromic, occasionally five O chromic, is used. Hemostasis is secured. An attempt is made to line up the proper tissue planes. Small bites are taken and sutures are tied to just approximate and not strangulate tissue. Interrupted sutures are used throughout. Sutures are taken in the vaginal fascia and the deep fascia. A few sutures are put in the mucosa but are not absolutely necessary if the fascia is properly apposed.

I believe it is important in reconstructing the fourchette to bring under it the bulbocavernosus fascia to insure proper sphincter control of the vagina.

The mucocutaneous junction should be carefully united with that of the other side in order to insure a clean-cut result, and the skin is approximated as much in line with the natural folds as possible.

The perineum is kept dry during the postpartum days in the hospital and at home. A pitcher douche is used after defecation or urination and a dry vulva pad is kept against the perineum.

Repair of the perineum does not preclude early rising and ambulation.

Postpartum Hemorrhage

IX

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DEFINITION: Postpartum hemorrhage is an excessive loss of blood following delivery and may come from the uterus, the episiotomy or from lacerations. It may occur suddenly or be cumulative over a period of several hours.

Significance:

1. One of the major causes of maternal mortality. Hemorrhage caused 30 per cent of all maternal deaths in 1944-1945. In Philadelphia 5 per cent of all maternal deaths were from postpartum hemorrhage. Kerr reports the following mortality from hemorrhage in Canada:

1931—137 deaths
1940—138 death (14 per cent)
1943—170 deaths (21 per cent)

2. Contributes to deaths from infection by reducing the resistance of the body to invasion of organisms. The incidence of sepsis is increased 400 per cent with a hemoglobin less than 10 gms.

3. In almost all instances these deaths are preventable. In the Philadelphia series the average duration of life after delivery was five hours.

Source and Normal Control of Bleeding.

The source of the postpartum blood loss

from the uterus in the absence of injury is the placental site. The bleeding from this area normally is controlled by active muscular contraction of the uterus which kinks and thus clamps off the open ends of the blood vessels. This is followed by retraction of the muscular wall of the blood vessels and last of all by blood clotting. If the muscle does not contract properly the bleeding will continue. Normally the placenta separates from the wall of the uterus because the space over which it is attached suddenly becomes smaller when the baby is delivered and since the placenta cannot alter its size it must be peeled off the wall of the uterus. Thus if when the uterus is emptied of its contents a firm contraction can occur only after each muscle fiber has retracted and reduced its length thus allowing an effective contraction. If the uterus is emptied suddenly there will be a delay before a firm contraction occurs; this prevents delivery of the placenta and may increase bleeding.

Bleeding may also come from lacerations of the vagina, the cervix, or the uterus itself.

Predisposing Causes to Postpartum Hemorrhage:

1. Anything which over-distends the uterus
   - a) twins
   - b) polyhydramnios
   - c) large baby
2. Anything which interferes with the normal uterine contractions.
   - a) prolonged labor—inertia
   - b) deep anesthesia—relaxes muscle
   - c) multiparity—some of the muscle tissue replaced by fibrous tissue—inadequate contraction.
   - d) fibroid tumors.
3. General Causes:
   - a) malnutrition and poor tissue
   - b) traumatic labor or delivery
   - c) varicosities which may be torn
   - d) blood dyscrasia

Prevention and Preparation for:

1. During Pregnancy
   - a) check general physical conditions and correct any obvious defects
   - b) correct dietary deficiency, particularly protein
   - c) check hemoglobin at least twice during pregnancy—once early and once in last month and give iron or blood transfusion if below 10 gm.
2. During Labor
   - a) prepare for postpartum hemorrhage if any patient with any predisposing cause—twins, varicosities, etc.
     - 1) have intravenous setup available
     - 2) be prepared to pack uterus
     - 3) be prepared to transfuse.
   - b) as little sedation as possible
   - c) rest periods at 8-10 hour intervals during prolonged labor
   - d) don't push labor with pituitrin or any other drug.
3. During delivery.
   - a) as little anesthesia as is necessary—regional anesthetic preferable
   - b) as little operative interference as necessary
   - c) no attempt at delivery until the cervix is completely dilated
   - d) slow delivery to allow the uterus to accommodate itself
     - 1) deliver anterior shoulder — wait 30 seconds
     - 2) deliver posterior shoulder—wait seconds
     - 3) slowly extract the rest of the baby
   - e) Delivery of placenta—This is the most important of the three stages of labor.
     - 1) place hand on uterus and express placenta when it is ready.
       - a) when fundus is globular rather than flat.
       - b) when pressure pushes the placenta down.
     - 2) when placenta is out push the uterus out of pelvis and massage it.
     - 3) give ergotrate 1 cc. I V or pitocin ½ cc. I M.
     - 4) examine placenta for missing parts.
     - 5) complete third stage before repair.

Treatment of Postpartum Hemorrhage:

1. At end of second stage
   - a) express placenta if separated; if not separated and the patient continues to bleed change gloves and drapes, cleanse perineum and manually remove the placenta.
   - b) elevate and massage uterus
   - c) give oxytoxic
   - d) pack if it does not respond
2. At end of third stage, uterus relaxed.
   - a) elevate and massage uterus
   - b) give oxytoxic

    c) explore uterus and vagina for injury or retained placenta if the bleeding is not immediately controlled.
    d) pack if it does not respond.
3. At end of third stage, uterus firm
    a) explore vagina and cervix for lacerations first
    b) if no source of bleeding found then explore uterus
4. During the first 24 hours
    a) return the patient to the delivery room—prepare and examine
        1) Cervix and vagina
        2) Cavity of uterus—manually.
5. Late postpartum hemorrhage
    a) examine under sterile precautions
    b) remove the placenta with large dull curette or placental forceps

The Administration of Fluids:

The usual reason for fatality from hemorrhage is that the bleeding is not controlled and blood is not replaced early enough and in sufficient quantity.

In the Philadelphia study the survival time of patients dying from postpartum hemorrhage was 5 hours, thus there usually is plenty of time to initiate therapy.

- a) be prepared to administer fluid—in the home delivery have saline and plasma available
- b) start blood as soon as is possible and give an amount at least equal to that lost

Results of Careful Management:

There will occur a marked reduction in postpartum hemorrhage and almost no deaths. Some patients may bleed more than the usual amount but prompt investigation and treatment will stop the bleeding before it reaches the proportion of hemorrhage.

Immediate Care of the Premature Baby

X

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I. Be Prepared
    1. Usually it is possible to determine that the woman in labor is not at term before birth.
    2. Twins frequently need premature care even at term.
    3. Make arrangement for premature care before birth.

II. During Labor
    Give as little sedation and anesthesia as possible.

III. Equipment for Immediate Care
    1. Incubator (electric or non-electric)
    2. Catheter and DeLee trap to clear pharynx and airway of mucus
    3. Warm sterile cotton blanket
    4. Cord ties and belly band
    5. Vitamin K
    6. Penicillin or Silver Nitrate solution to prevent ophthalmia neonatorum

IV. At Birth
    1. Deliver the baby directly into the warm sterile blanket and keep covered to prevent chilling
    2. Aspirate mucus from the baby's mouth and posterior pharynx with only its face exposed
    3. If skilled, aspirate mucus from the trachea
    4. Do not blow air through the catheter into the trachea or lungs
    5. Tie the umbilical cord—if the baby's condition is poor or if the baby's birth weight is less than 3 lbs. leave clamp on the cord and tie after its temperature has stabilized in the incubator (Baby's axillary temp. 96°)
    6. Give Vitamin K intramuscularly
    7. Place immediately in the incubator with the warm covers still placed loosely about the baby
    8. Handle the baby as little as possible during resusitation and thereafter
    9. When the axillary temp. is 96°
        1) Wipe off the meconium blood, and the excess vernix in the skin folds with sterile oil and sterile cotton
        2) Weigh (weight gain is the best indication of satisfactory progress in a premature baby)
        3) Put a diaper on the baby
        4) Remove cover
    10. Give oxygen as soon as possible for at least 24 hours (longer if indicated)

11. Nothing by mouth for 24 hours
12. Repeat Vitamin K in 24 hours
13. Do not bathe or oil baby's body
14. Clean the buttocks when necessary with sterile cotton and sterile oil
15. If a stimulant is needed Caffeine Sodium Benzoate or Adrenalin is best
16. Parenteral fluids are necessary on many small prematures before they can tolerate an adequate fluid intake
17. Constant care will prevent many deaths from aspiration
18. The best care for a premature baby is in a premature nursery that is properly equipped and staffed.

The Postpartum Visit*

X*I*

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THIS talk is intended primarily as an informal discussion of the postpartal examination usually done at six weeks after delivery. Six weeks is mentioned because it is the customary time allowed to elapse from the date of delivery to the date of examination. Some who are using early ambulation have found that it is satisfactory to do this examination as early as three weeks postpartally. Patients should be questioned again with the same questions which we ordinarily ask in any gynecological or obstetrical visit. The patient should be asked relative to headache, difficulties with her breasts, backache, leukorrhea, bleeding, whether she has menstruated, whether she has had intercourse and if so whether there was dispareunia.

The examination should consist of weighing the patient and checking her blood pressure. It probably would be wise routinely to check the patient's urine. When the patient is placed on the examining table one should examine each breast and note any abnormalities, the abdomen should be palpated, the vulva, and if an episiotomy has been done, the episiotomy wound should be inspected and palpated. The speculum should be used. This is of prime importance. The cervix visualized and any erosion present is best cauterized with the actual cautery. Position of the uterus should be determined, its size and whether or not involution has been complete. The adnexa should be palpated and any abnormalities noted. The patient's legs should next be inspected for any signs of venous complications which may have arisen and gone unnoticed during the time of parturition or the early postpartal period.

The importance of this examination, particularly the use of the speculum, cannot be over-emphasized.

In the following brief discussion we will take up each pathological abnormality which may be found and give a brief discussion as to treatment which we institute. Should the patient complain of headache she should be reassured that it is probably not due to anesthesia. I mention this because too many patients have an untoward fear of spinal anesthesia and have heard of the sequelae of headache, and if they have had any type of needle in their back they generally have had a spinal and expect a headache to follow. Other causes of headache are the run-of-the-mill but we must not forget that occasionally drugs which we may be using in the postpartal period may play a part and it is well to review what therapy the patient is undergoing. Probably the most common cause of headache in the postpartal period, and this applies particularly to the young primipara, are the new responsibilities of the baby and its care, the irregular sleeping and eating hours which result from the care of the newcomer to the house. The patients should be reassured, and these facts explained to them.

Backache is similarly a common complaint. Usually this, too, is due to the unusual activities which the young mother is now attempting. The lifting of the child so often during the day, care of the baby, and the feeling of inadequacy as far as the care of the infant is concerned. Here again, reassurance usually helps. We must not forget that there are other causes of backache following pregnancy. The relaxation of the pelvic joints during pregnancy may persist in the postpartal period and taping or strapping of the back for a few weeks may completely relieve the symptoms. Wearing of a tight girdle may similarly help considerably. Additional measures which are

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simple and do not require extensive studies on the patient and serve to help in a differential diagnosis are such things as placing boards under the mattress and other simple orthopedic measures. Backache, however, may be a symptom of inherent pathology in the genital organs.

Leukorrhea may be a manifestation of trichomonas and/or yeast infection. These can best be found by the use of the saline drop method and examination of the specimen under the microscope, and if the organism of trichomonas is found, appropriate therapy instituted. Our usual measure in this condition is thorough cleansing of the vagina with green soap and water, then drying with dry sponges and then insufflation with floraquin powder. This can be done on three successive days of office visits and then floraquin tablets prescribed for the patient to insert at home, usually two being inserted daily into the vagina and preceded by a douche of a quart of water in which 2 tablespoonfuls of household vinegar have been added.

If the yeast organism is found, we are using a preparation with the proprietary name of propion gel. The patient is to rub this gel on the external genitalia, then to insert approximately a tablespoonful into the vagina nightly for the period of about a week or until symptoms are alleviated. Follow-up on these patients should continue through the following menstrual cycle and re-examination of smears to see if the organisms are still present, and if so, therapy can be continued through another cycle.

The episiotomy wound must be inspected closely for fragments of suture material. If the patient has had dyspareunia this is the most common site and the more common cause is usually granulation tissue or retained suture which is usually easily identified and can be removed in the office. Dilatation of the vagina at the introitus may be necessary and can best be done with the ordinary speculum with gentle opening of the blades. Then the patient is given instruction to dilate herself when she is taking a bath. She can do this by inserting one finger, then two fingers and then gently spreading the fingers daily until such time that her complaint is no longer present. When the cervix is inspected and one finds erosion, a repeat with the actual cautery should be used regardless of the degree of erosion. Even a few millimeters seen on one visit, if the patient returns a month or so later, may later completely surround the os.

Cauterization of these lesions is best done with the cautery tip heated to a cherry red and gently and lightly touched to the erosion. After this treatment has been done, the patient must be inspected after a four-week interval, at which time not only observation whether the lesion has healed but also for passage of the sound to prevent cicatrization of the external os. During this monthly period the patient should douche daily with a quart of water containing at least two tablespoonfuls of ordinary household vinegar.

Subinvolution of the uterus, usually is manifested by persistent bleeding. Ergotrate used in small dosages as prescribed by the physician usually suffices to correct this bleeding abnormality. However, if the uterus is retrodisplaced, a pessary, usually of the Smith or Hodge type, is used, the uterus replaced anteriorly and a pessary placed in the vagina and allowed to remain for about two months, the patient being examined about every three to four weeks. While the pessary is in place it is best for the patient to use douches similar to the ones already mentioned.

If the patient has had a history of a retrodisplacement prior to this particular pregnancy, and at this postpartal visit, the uterus is found anteriorly it is considered good practice to insert a pessary anyway. We feel that this can be prophylaxis to prevent the patient from again having a retrodisplacement. While retrodisplacements are not in themselves severe pathologic lesions we feel that if one is found in the postpartal period or if the patient has had a history of retrodisplacement of which the physician attending the patient knew from previous examination, the postpartal time is **the** time to attempt correction by such a simple measure as pessary and perhaps save the patient future operative procedures.

Vascular complications such as varicose veins and hemorrhoids can be best evaluated in the postpartal visit rather than during pregnancy. If the patient's varicosities in the legs have persisted, it may be wise to consider specific treatment, particularly if the patient is considering future pregnancies. This, of course, is left to the judgment of the surgeon. Similarly, hemorrhoids should be treated according to the physician's judgment.

To summarize, every patient who has delivered a baby or who has had an abortion or miscarriage should be checked four to six weeks after parturition. The main purpose of this check is prophylactic therapy and a rediscussion with the patient of hygiene in general. The use of the cautery in the eroded surface to us is most important and we feel that keeping a cervix epithelizated and free of disease, as can easily be done with light cauterization, perhaps will aid in the prevention of more serious complications later in the patient's life. The use of the pessary is again emphasized and its use as a prophylactic measure mentioned. The discussion of the patient of her responsibility, particularly in the young primipara with the new child can be of great importance in the future psychological life of the patient and her child.

Pediatric Emergencies*

CHARLES E. WARD, M.D.
Jackson, Miss.

I WISH to present briefly some of the emergency conditions which have caused me most anxiety in private practice.

In the newborn period, erythroblastosis, diarrhea, and anomalies of the gastrointestinal tract have most often required emergency treatment.

If erythroblastosis is anticipated in the infant before its birth, blood is usually made available by the time of delivery. We have given blood through the umbilical vein immediately after delivery. The cord should be left long for this procedure. Regular transfusions through scalp veins, and replacement transfusions through the external saphenous vein have been employed, depending upon the severity of the disease.

Unfortunately, in our experience, antibody estimations during pregnancy have not always proved reliable in forecasting erythroblastosis in the infant. The suspected infant should be carefully checked regardless of the mother's previous antibody tests. On the other hand, unsuspected erythroblastosis has appeared in the first infant of mothers who have had transfusions many years before pregnancy.

Severe diarrhea in the newborn and small child often leads to dehydration and acidosis within a few hours. Fluids, including blood, have been most easily administered by means of a small cannula placed in ankle vein by the "cut-down" technique. This has been a most valuable procedure in other conditions requiring large amounts of parenteral fluids, especially in the treatment of shock and in preoperative and postoperative care. This cannula is usually felt in place seventy-two hours. Occasionally it may be used for five or six days.

Correctible major anomalies may well be surgically treated as early as possible as the infant tolerates surgery better during the first forty-eight hours after birth than it does a few days later.

Croup, laryngotracheobronchitis and bronchopneumonia have caused most emergencies of the respiratory tract. Simple croup responds to antipyrine, phenobarbital, and those drugs used in the treatment of the allergic conditions. The more severe cases with fever are treated also with the sulfonamides and antibiotics.

Laryngotracheobronchitis and the type of pneumonia called "capillary bronchitis" are usually treated in a similar manner. In the former disease it is difficult to decide when tracheotomy is to be done. Oxygen flowing through a nebulizer has been very useful. We have usually combined treatment with the antibiotics and sulfonamides. Penicillin and streptomycin can be given together in the same syringe. Recently chloromycetin has been highly recommended in these diseases.

The cardiac emergencies have been most often caused by congenital anomalies, paroxysmal tachycardia, acute hemorrhagic nephritis, and severe infections. All of these may cause cardiac failure. Paroxysmal tachycardia is usually unsuspected until advanced cardiac failure is present. A rapid heart rate is common in children. A rate of 180 per minute or above is suspicious of paroxysmal tachycardia. We have seen a rate of 300 per minute in a two months old infant. Full digitalization, using an injectable preparation, has been most useful in slowing tachycardia and in treating cardiac failure.

The neurological complications of acute

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*Read before the Section on Pediatrics at the eighty-second annual session of the Mississippi State Medical Association, Biloxi, Miss., May 9-11, 1950.

hemorrhagic nephritis, due chiefly to hypertensive encephalopathy, are manifested by hypertension and convulsions. In these patients it is desirable that the blood pressure be checked twice a day, therefore the average case should be hospitalized. The hypertension is treated by magnesium sulphate by mouth and by the intramuscular injection of a 50 per cent magnesium sulphate solution, .2cc per kilo every 4 hours. In urgent cases 100 to 150 cc. of a 2 per cent solution of this drug may be given intravenously. Spinal puncture may be of value in treating convulsions.

The common poisons are often ingested by children. A "universal antidote" is useful. This is a powder composed of animal charcoal 2 parts, tannic acid 1 part, and magnesium oxide 1 part. One or two tablespoons of this powder can be used to lavage the stomach for most poisons. Phosphorus, often used in rat poisons, is extremely dangerous, rapidly causing liver damage. Gastric lavage with copper sulphate solution, about 15 grains to a quart of water, is advisable.

Poisoning with the heavy metals can be first treated by gastric lavage with the "universal antidote." After these metals have been absorbed treatment with BAL (British-Anti-Lewisite) is recommended. This drug is 10 per cent solution in peanut oil and benzyl benzoate is administered intramuscularly. The usual dose is about 2.5 to 5 mg. BAL per kilo every 4 hours for 2 or 3 days. BAL is especially efficient in combining with arsenic and withdrawing it from the tissues.

We have seen several child patients critically ill with aspirin poisoning. These cases are characterized by hyperventilation and acidosis as in diabetic acidosis. Intravenous fluids, especially sodium lactate solution and blood, are useful.

The common surgical emergencies of childhood include appendicitis and intussusception. The diagnosis is often difficult, especially during an epidemic of gastroenteritis. Appendicitis is often not suspected as non-surgical conditions such as gastroenteritis and tonsillitis cause most of the vomiting and abdominal pain in these small patients. The cooperation of the child is often difficult to obtain. Symptoms are varied and unreliable. Fever may be absent or high. Vomiting may not be present in severe cases of peritonitis. Gentle and careful palpation of the abdomen is most informative. Muscle spasm and localized tenderness are the chief signs of appendicitis. When in doubt it is better to operate. When the diagnosis is certain peritonitis is often present.

I believe that it is desirable in general peritonitis to remove the appendix. Streptomycin, penicillin, intravenous fluids, and blood transfusions are life saving adjuncts in the treatment of peritonitis.

Intussusception is most common in the infant about 7 months of age. It is often confused with gastroenteritis because of abdominal cramps and the appearance of blood and mucus from the rectum. This blood is small in amount and does not clot. Some cases are characterized by the rapid appearance of shock in addition to the classical periodic pains which are likened to "labor pains." In many cases a tumor mass cannot be felt. An enema may be tried early in the treatment of suspected intussusception, but operation must not be delayed. The mortality rate is still high because of late diagnosis. Early operation is imperative.

We have occasionally seen torsion of the spermatic cord produce severe pain and crying with swelling of the testicle. These cases must be operated upon in order to save the testicle.

One acute infection, meningococcemia, has often produced death in a few hours, before the stage of meningitis. This disease is characterized by petechiae and ecchymosis into the skin, "spotted fever." Symptoms of shock may develop rapidly. Some apparently have adrenal hemorrhage. Treatment consists in intravenous administration of sulfonamides, fluids, and blood, combined with massive doses of penicillin. I am not sure of the value of adrenal cortical extracts in this condition, although I have used them.

I wish to mention one other interesting and dramatic disease. On two occasions I have seen small children paralyzed by a tick bite on the scalp area. One child was suspected to have a head injury, while the second child was under observation for brain tumor. The common "dog tick" secretes a neurotoxin causing paralysis and ataxia. The tick must be attached to the head of the child, usually unnoticed in the scalp. Tick paralysis is symmetrical, beginning in the feet and progressing upward, often causing death by respiratory paralysis as in poliomyelitis. The neurotoxin is rapidly eliminated and recovery begins when the tick is removed. Tick paralysis should be suspected in a child who exhibits an afebrile, acute, ascending, symmetrical paralysis accompanied by ataxia.

In pediatric practice we see a variety of acute illnesses which require rapid diagnosis and treatment. A small child cannot long survive a severe acute disease. We must try to anticipate complications and avoid the axiom of too little and too late.

DISCUSSION

Dr. S. L. Bailey (Kosciusko)—I am very happy to have the opportunity to discuss this very worthwhile paper of Dr. Ward's. Certainly he has called to our attention some condition that should ever be borne in mind in our practice with infants and children.

The discussion of erythoblastosis is most timely. When we remember that about one case occurs to every 450 deliveries and is responsible for 3 per cent of foetal deaths, we need to be ever on the alert. Recently, I had a patient in her fifth pregnancy—one living baby and 3 who had died with this condition, who came hopeful of a normal baby. I gave her no encouragement except to try to plan what could be done after delivery for the baby. She delivered a foetus, near term, with foetal hydrops and the baby gasped for only a few minutes after birth. I felt she should have no other pregnancy and so advised her. I merely mention this from the viewpoint of all of us who are doing general practice to say that there should be an Rh factor determination on both husband and wife in all our obstetrical cases. We could then be, in some measure at least, forewarned and the parents made aware of the possibility. The recent article, "Present Status of the Management of the Rh Negative Pregnant Woman" in **Surgical Clinics**, February, 1950, is a rather practical picture of the true status of this condition at present.

In addition to the common poisons mentioned by the essayist I would add that of acute lye poisoning. I have never been able to understand what there is about lye that causes children to drink it, but we all know that such incidents are fairly common. When we recall how much scarring of the oesophagus occurs once the burn has healed we do regard this as a real emergency of childhood.

Then to mention insect bites, I would like to present briefly a case report of a patient recently brought to our hospital with chief complaint of acute abdominal pain. A four-year-old youngster was playing ball in the yard at his home and the ball (as we found out on close questioning of the mother) went into the garage in a straw nest. A few minutes later the child came running into the house complaining of severe pain. He was brought to the hospital about one hour later—temperature normal, accelerated pulse, white blood count 18,300 but with broadlike rigidity of the abdomen. His picture resembled that of an acute surgical abdomen, but on second visit to the room and careful examination there was found a hyperemic area in the popliteal space. Immediately the idea came of a spider bite and 8 cc. of calcium gluconate was given I.V. Within 30 minutes the youngster was fairly comfortable and he left the hospital the next morning perfectly all right.

Dr. Guy T. Vise (Meridian)—Dr. Ward has given us an excellent and concise paper on pediatric emergencies.

When a mother tells a physician her baby is acutely ill, that baby should be considered so until proved otherwise. It is not always easy to ascertain the severity of a condition in a child. The mother's story usually gives us the first clue to many pediatric emergencies.

A rectal exmination is of great importance in the correct and early diagnosis of appendicitis in children. The appendix can be palpated in most cases and signs of pain are easily noted, even in infants, when the appendix is gently touched by rectal examination. I believe a rectal examination is of more value in infants and small children in the diagnosis of appendicitis than abdominal palpation.

Resuscitation of the newborn, by mouth-to-mouth method through sterile gauze, can be used safely and easily by all physicians, whether the delivery is in a home or hospital. I have found it to be more satisfactory than any other method. By supporting the infant's head with one hand and placing the other hand on the infant's chest, the physician has control of inspiration and expiration. There should be no danger of over-distending a lung. Cerebral hemorrhage in the newborn is increased by venous congestion during cyanosis.

Doing a good tracheotomy is essential in handling pediatric emergencies. All physicians, regardless of their type of practice, should be able to do this life-saving operation. It can easily be taught in medical schools on animals, so that every doctor can easily and safely do a tracheotomy when the emergency arises. When doing a tracheotomy, wrap the patient in a sheet securely, to restrain the hands. Take time to ligate all bleeders before opening the trachea. Aspirated blood clots are the chief cause of death following tracheotomy. Early operation, before cardiac exhaustion, is important. All severe cases of tetanus (lockjaw) should have a tracheotomy. All so-called cardiac or anaesthetic deaths during tonsillectomies or other operations on children should be given the chance of survival by doing a tracheotomy—since most of the 'cardiac' deaths are really due to aspiration of blood, mucus and stomach contents. The trachea of a child is so easily obstructed that death may be very rapid and the value of a life-saving tracheotomy may be overlooked during the emergency.

STOCKHOLM PICKED FOR NEXT WORLD MEDICAL MEETING

The registration at the fourth General Assembly of the World Medical Association, held recently in New York, totaled more than 500, including doctors from 28 different countries.

Dr. Elmer L. Henderson, Louisville, president of the A.M.A., was inducted as president of the World Medical Association and in his inaugural address he called upon doctors everywhere to "demonstrate convincingly that international cooperation is a workable reality." He also urged the doctors to "prove that men can work together for self-improvement and the benefit of humanity—regardless of differences in nationality, race, creed or political philosophy."

ANNOUNCING

THE FOURTEENTH ANNUAL MEETING

of

The New Orleans Graduate Medical Assembly

Conference Headquarters — Municipal Auditorium — March 5-8, 1951

GUEST SPEAKERS

Dr. Theron G. Randolph, Chicago, Ill.
Allergy
Dr. Marshall Brucer, Oak Ridge, Tenn.
Atomic Medicine
Dr. Donald M. Pillsbury, Philadelphia, Pa.
Dermatology
Dr. Jerome W. Conn, Ann Arbor, Mich.
Endocrinology
Dr. H. Marvin Pollard, Ann Arbor, Mich.
Gastroenterology
Dr. John L. McKelvey, Minneapolis, Minn.
Gynecology
Dr. Arlie R. Barnes, Rochester, Minn.
Medicine
Dr. Cornelius P. Rhoades, New York, N. Y.
Medicine
Dr. George S. Baker, Rochester, Minn.
Neurosurgery
Dr. Newell W. Philpott, Montreal, Can.
Obstetrics
Dr. John M. McLean, New York, N. Y.
Ophthalmology
Dr. Harold A. Sofield, Chicago, Ill.
Orthopedic Surgery
Dr. Henry B. Orton, Newark, N. J.
Otolaryngology
Dr. Stanley P. Reimann, Philadelphia, Pa.
Pathology
Dr. Alfred V. Stoesser, Minneapolis, Minn.
Pediatrics
Dr. Nathan Womack, Iowa City, Ia.
Surgery
Dr. Paul C. Hodges, Chicago, Ill. *Radiology*
Dr. Charles S. Welch, Boston, Mass.
Surgery
Dr. Austin I. Dodson, Richmond, Va. *Urology*

Lectures, symposia, clinicopathologic conferences, round-table luncheons, surgical and medical procedures in color television and technical exhibits (All-inclusive registration fee — $15.00)

THE POSTCLINICAL TOUR TO PANAMA, COLOMBIA, ECUADOR AND PERU—MARCH 10-25

For information concerning the Assembly meeting and the tour write Secretary, Room 103, 1413 Tulane Avenue, New Orleans 12, La.

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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Address all material for publication to W. H. Anderson, M.D., Booneville, Mississippi.

Editorials

Starkville and Tunica recently opened fine hospitals.

The Academy of General Practice put on another fine program in Jackson on December 7. This organization is really on the job.

Public relations on the part of hospitals and doctors is very important.

If you know of a "fifty-year" doctor in the Northeast Mississippi Society who has not received his gold fifty-year pin, please let us know.

COMING MID-SOUTH MEETING

The Mid-South Postgraduate Medical Assembly is on the February slate and an excellent program has been prepared. Make your plans to attend. Mark your calendar and reserve your room. Convening at the Peabody Hotel, it is different from any other meeting. It attempts to summarize the latest in medicine and surgery for the busy practitioner in a four-day course. No city is better situated than Memphis, which already is a noteworthy medical center, with one of the outstanding medical schools in the nation. The doctors of Memphis are most cordial. It will do you good to go to this meeting.

MISSISSIPPI HOSPITALS

Hospitals in our state continue to open. We are on the way with one of the very best systems in this nation. Mississippi was at the bottom of the list in hospital beds per capita and in occupancy also. In 1946 we had only 3,000 general hospital beds; now we have about 4,600. When our hospital system is completed, which we hope it will be in 1955, we will have 8,000 general hospital beds and more than 13,000 in all. With the fine distribution of hospitals we will be well prepared to give good service to every person in the state provided the beds can be available to every sick person. Our per capita distribution of funds will continue to be a benefit. Prepaid hospital insurance will be our greatest aid to the rank and file. Of course, the large and better equipped hospitals will be more expensive to operate. The Packard car rides mighty fine and may get you there quicker, but the added weight calls for more gasoline. It is possible, however, for us to utilize the essentials in modern medicine if we do it at the local level of a small town and rural community. The more people who patronize the hospitals, the easier it should be to finance them and the less the cost should be. The success of our hospitals will depend largely upon the cooperation of the doctors, the nurses, the trustees and the administrator. All should put the patient first, but he should show interest and cooperation.

DELTA MEDICAL ELECTS

At the semi-annual meeting of the Delta Medical Society, held in Belzoni on November 11, the following new officers were elected:

President—J. W. Williams, M.D., Greenville.

Secretary-Treasurer — Howard A. Nelson, M.D., Greenwood.

News and Comment

ACP MEETING IN MEMPHIS

The regional meeting of the American College of Physicians, Louisiana, Texas, Tennessee, and by invitation: Alabama, Arkansas, and Mississippi will convene at the Peabody Hotel, Memphis, Tenn., Jan. 12-13, 1951.

Members of the College in Louisiana, Texas, and Tennessee are very anxious to make this Mid-South regional meeting a yearly event. In the next two years this meeting will be held in Louisiana and in Texas. All Fellows and Associates of the College and their wives are invited. Members may invite as their guests—non-members who are interested in Internal Medicine.

PROGRAM

FRIDAY AFTERNOON SESSION—BALLROOM THE HOTEL PEABODY

11 a.m. Registration—Mezzanine floor

12 to 1 Lunch

Meeting starts promptly at 1:30 p.m.

Thirty minutes for each paper

Presiding: Thomas Findley, M.D., F.A.C.S., Governor for Louisiana

The New Nomenclature for Blood Cells—L. W. Diggs, M.D., Prof. of Medicine, Head of Clinical Laboratory, University of Tenn.

Studies on Controlled Acute Cardiac Failure—A. C. Guyton, M.D., Prof. of Physiology and Biophysics, University of Mississippi

Adrenal Pituitary Relationships in Renal Function—C. H. Burnett, M.D., Prof. of Medicine and Chairman of Department of Medicine, Southwestern Medical School, Texas

Comments on Pernicious Anemia—Edgar Jones, M.D., F.A.C.P., Associate Professor of Clinical Medicine, Vanderbilt University School of Medicine

Recent Advances in the Treatment of Tuberculosis—D. E. Jenkins, M.D., Associate Professor of Medicine, Baylor University College of Medicine, Texas

An Experimental Study on Methods for the Prolongation of Life in the Nephrectomized Dog and Its Application to the Human — A Grollman, M.D., F.A.C.P., Professor and Chairman of Dept. of Experimental Medicine, Southwestern Medical School, Texas

FRIDAY EVENING SESSION—HOTEL PEABODY BALLROOM

6 to 7 Reception and Refreshments

7 p.m. Banquet—Informal (wives invited). Limited to Fellows and Associates of the College

Toastmaster—Dr. O. W. Hyman, Dean of the University of Tennessee Medical School

Address—William S. Middleston, M.D., F.A.C.P., Professor of Medicine and Head of the Department, University of Wisconsin

ACTH and Cortisone—Willard O. Thompson, M.D., F.A.C.P., Clinical Professor of Medicine, University of Illinois College of Medicine

SATURDAY MORNING SESSION, 9 A. M.

Presiding: D. W. Carter, Jr., M.D., F.A.C.P., Governor for Texas

Portal Hypertension: Clinical and Therapeutic Considerations—Charlie T. Stone, M.D., F.A.C.P.. Professor of Medicine and Chairman of Department, University of Texas Medical School

The Kidney as an Endocrine Gland—Thomas Findley, M.D., F.A.C.P., Professor of Clinical Medicine, Tulane University School of Medicine

Clinical Aspects and Management of Atrial Flutter—G. R. Hermann, M.D., F.A.C.P., Professor of Medicine, University of Texas Medical School

Angiocardiography in the Definitive Diagnosis of Cardiovascular Disease—Harold S. Jacobs, M.D., Instructor in Medicine, Louisiana State University

The Dilemma of Multitudinous Leads in Clinical Electrocardiography—W. R. Akenhead, M.D., Associate Professor of Medicine Louisiana State University

Laboratory Procedures for Diagnosis and Control of Therapy in Rheumatoid Arthritis—B. B. Wells, M.D., Professor and Head of Medicine, University of Arkansas

Problems and Their Management in Central Nervous System and Cardiovascular Syphilis—Henry Packer, M.D., F.A.C.P., Professor of Preventive Medicine, University of Tennessee College of Medicine

GOLDEN WEDDING

One of the most charming events attended by friends from all parts of the state was the golden wedding anniversary of Dr. and Mrs. J. W. Lucas of Moorhead.

The gold-lettered invitation read:

Dr. and Mrs. John Fair Lucas
Mr. and Mrs. James Walter Lucas, Jr.
Capt. and Mrs. Albert Davis Lucas
Mr. and Mrs. B. Aubert Holaday, Jr.
honoring
Dr. and Mrs. James Walter Lucas
Golden Wedding Anniversary
Sunday, the nineteenth of November
from four until six o'clock
Community House
Moorhead, Mississippi

LIST OF EXHIBITORS FOR MID-SOUTH POSTGRADUATE MEDICAL ASSEMBLY

Abbott Laboratories, North Chicago, Ill.
A. S. Aloe Company, St. Louis, Mo.
Ames Company, Inc., Elkhart, Indiana
Ayerst, McKenna and Harrison, Ltd., New York, N. Y.
Bilhuber-Knoll Corporation, Orange, New Jersey
Brayten Pharmaceutical Company, Chattanooga, Tenn.
Burroughs Wellcome and Co. (USA) Inc., New York, N. Y.
Cameron Surgical Specialty Company, Chicago, Ill.
G. W. Carnrick Company, Newark, New Jersey
Ciba Pharmaceutical Products, Inc., Summit, New Jersey
The Dick X-Ray Company, Memphis, Tenn.
R. Yates Dillard and Company, Memphis, Tenn.
General Electric X-Ray Corporation, Memphis, Tenn.
Gerber Products Company, Fremont, Michigan
H. J. Heinz Company, Pittsburgh, Pa.
Hoffman-LaRoche, Inc., Nutley, New Jersey
Holland-Rantos Company, Inc., New York, N. Y.
Kay Surgical, Inc., Memphis, Tenn.

Kidde Manufacturing Co., Inc., Bloomfield, New Jersey
Lederle Laboratories Division, American Cyanamid Company, New York, N. Y.
Eli Lilly and Company, Indianapolis, Ind.
J. B. Lippincott Company, Philadelphia, Pa.
M and R Dietetic Laboratories, Columbus, Ohio
J. A. Majors Company, New Orleans, La.
The S. E. Massengill Company, Bristol, Tenn.
Mead Johnson and Company, Evansville, Indiana
Memphis Limb and Brace Company, Memphis, Tenn.
Mercere-Stover, Inc., Memphis, Tenn.
The Wm. S. Merrell Company, Cincinnati, Ohio
Mid-South Oxygen Company, Memphis, Tenn.
Philip Morris and Co., ltd., Inc., New York, N. Y.
The National Drug Company, Philadelphia, Pa.
Ortho Pharmaceutical Corporation, Raritan, New Jersey
Parke, Davis and Company, Detroit, Michigan
Pet Milk Company, St. Louis, Missouri
Chas. Pfizer and Co., Inc., Brooklyn, N. Y.
A. H. Robins Co., Inc., Richmond, Virginia
Sandoz Pharmaceuticals, New York, N. Y.
Schering Corporation, Bloomfield, New Jersey
Sealy Company of the Southeast, Memphis, Tenn.
Sharp and Dohme, Inc., Philadelphia, Pa.
Southern Surgical Supply Company, Memphis, Tenn.
E. R. Squibb and Sons, New York, N. Y.
The Stork Shop, Inc., Memphis, Tenn.
Wm. T. Stover Co., Inc., Little Rock, Ark.
Frederick Trout Co., Inc., Mt. Vernon, New York
Union Hospital Supply Co., Memphis, Tenn.
U. S. Vitamin Corporation, New York, N. Y.
The Upjohn Company, Kalamazoo, Michigan
White Laboratories, Inc., Newark, New Jersey
Winthrop-Stearns, Inc., New York, N. Y.
Wyeth Incorporated, Philadelphia, Pa.

TO ALL DOCTORS IN MISSISSIPPI WHO ARE UNDER FIFTY (50) YEARS OF AGE

1. If you hold a commission in the Army of the United States AUS your commission is not recognized by The Selective Service System. Unless your commission is in the Reserve Corps of the Army, Navy, or Public Health Service you are subject to the draft and will be required to register with Selective Service just as if you had no commission.
2. You should immediately determine your status with your local draft board under whose jurisdiction you come.
3. If you are under the jurisdiction of a draft board in a state other than Mississippi you should immediately initiate an effort to have your jurisdiction transferred to Mississippi.
4. Unless you do this you may be drafted by another state to fill its quota for medical officers for the Armed Forces instead of for the State of Mississippi.
5. If it is deemed advisable to request deferment, affidavits should be filed with your local draft board who has jurisdiction, setting forth the facts as they exist.
6. The draft board has final jurisdiction but each individual has the right to appeal to the State Advisory Committee and to the Selective Service Appeal Board.

Yours very truly,
H. C. Ricks, M. D.
Secretary of the Council
Mississippi State Medical Ass'n.

AMITE-WILKINSON COUNTIES MEET

The regular meeting of the Amite-Wilkinson Counties Medical Society was held in the assembly room of the Field Memorial Community Hospital, Centreville, Mississippi, Thursday evening, November 9. A good attendance of members and their wives was noted. Dr. and Mrs. Sharpe, recently moved to Gloster, were welcomed to the group.

Following the election of officers for the forthcoming year, an interesting program was presented. Dr. David Thornhill brought a brief but comprehensive resumé of the high points of the recent meeting of the American Academy of General Practice at Meridian, Mississippi. Dr. Paul Jackson of Clinton, Louisiana, gave a most interesting case history of a massive hemothorax complicating an instantaneous pneumothorax. Dr. Jackson is to be congratulated upon his brilliant and successful conduct of this case.

After a rising vote of thanks and appreciation to Miss Boles, superintendent of hospital nurses, for her gracious hospitality and customary skill as a culinary artist, the meeting was adjourned.

INTERNATIONAL COLLEGE OF SURGEONS

The Southern Section of the United States Chapter of the International College of Surgeons welcomes you to join its meeting January 11, 12, 13, 1951, at the Biltmore Hotel, Atlanta.

The faculty includes Dr. Herbert Acuff, Knoxville; Dr. Henry E. Bacon, Philadelphia; Dr. Richard Cattell, Boston; Dr. Gilbert Douglas, Birmingham; Dr. Lawrence Fallis, Detroit; Dr. Merrill Foote,- Brooklyn; Dr. William Hamm, Atlanta; Dr. D. P. Hall, Louisville; Dr. Claude Hunt, Kansas City; Dr. Arnold Jackson, Madison; Dr. Amos Koontz, Baltimore; Dr. Raymond McNealey, Chicago; Dr. Frank Meleney, New York; Dr. Karl Meyer, Chicago; Dr. Phillip Thorek, Chicago; Dr. Howard Trimpi, Philadelphia; Dr. Exum Walker, Atlanta.

No registration fee.

POSTGRADUATE COURSE FOR CHEST PRYSICIANS

The Council on Postgraduate Medical Education of the American College of Chest Physicians announces a postgraduate course in the recent advances in diseases of the chest, to be held at the Vanderbilt University School of Medicine, Nashville, Tennessee, January 22-27, 1951. The clinical, pathological, radiological, physiologic and surgical aspects of chest diseases will be presented by the members of the faculties of the Southern medical schools. Tuition is $50.00 and registration is limited.

EIGHT INITIATES FROM MISSISSIPPI TO A.C.S.

At the annual meeting of the governors and fellows of the American College of Surgeons held at the Copley Hotel Plaza in Boston, October 26, Dr. Alton Ochsner of New Orleans was elected president-elect, to succeed Dr. Henry W. Cave of New York, president. At the convocation held in Symphony Hall, eight of the 978 initiates, largest class since 1914, are from Mississippi. These are: Drs. Wightman R. Duke, Columbus; Thomas Madison Dunn, J. Harvey Johnston, Lee R. Reid, and Thomas Safley, Jr., all of Jackson; John P. Fatherree, Laurel; John W. Hunter, Jr., Meridian; and Isaac Cecil Knox, Jr., Vicksburg.

DOCTOR IN PEARCE FAMILY FOR MORE THAN A CENTURY

For 105 years there has been a doctor in the family of Dr. L. P. Pearce of Collierville, Tenn.

Five generations ago Dr. W. H. Pearce moved in 1845 to Tippah County, Miss., after being graduated from the University of Pennsylvania College of Medicine.

His son, Dr. L. S. Pearce, the father of Collierville's Dr. Pearce, began to practice in 1870 at Brinkley, Ark., later moving to Falkner, Miss., where the brother of Collierville's Dr. Pearce, Dr. J. H. Pearce, is now a physician.

Two of Dr. J. H. Pearce's sons became doctors and one became a dentist.

The granddaughter of Dr. J. H. Pearce and the great niece of Dr. L. P. Pearce is now serving her internship. She is Dr. Iris A. Pearce.

Dr. L. P. Pearce recalls that he made the first visit in 1901 when he was under the supervision of his doctor father. "He was the best teacher I ever had," he said, "and he taught me Latin, Greek and anatomy before I entered the Memphis Hospital Medical College, now the University of Tennessee College of Medicine, where I was graduated in 1904."

He began his practice at Falkner, moving later to the Cayce community and in 1921 to Collierville.

CENTRAL MEDICAL STUDIES PROBLEMS

Last month the Central Medical Society directed its attention chiefly toward arriving at the most workable plan for giving a complete medical care to its territory. Mr. R. F. Rember, public relations representative from the American Medical Association, addressed the doctors at their evening meeting. He also, by arrangement of the secretary, Dr. T. A. Baines, met with lay leaders at a luncheon meeting, when a forum on the problems and costs of medical care revealed the various phases of public opinion.

Mr. Rember concurred with the Jackson doctors in the advantages of a doctors' exchange by which a patient may obtain a doctor day or night. The group also plan an educational campaign by which every resident will contact a doctor, declare his intention of having him as a family physician, and thus eliminate much of the misunderstanding and difficulty resulting from no doctor having been consulted before illness occurs.

Continued encouragement of voluntary health insurance in all income groups was endorsed.

The motion picture "M.D. U.S.A.," depicting in magnificent manner the marvelous progress and efforts of modern American medicine was shown the assembly following the dinner.

ANNOUNCEMENTS

The Lyle Motley Clinic announces the association of A. Wilson Julich, M.D., practice limited to internal medicine, 899 Madison Avenue, Memphis, Tennessee.

Members of the medical profession in Mississippi are invited to attend a two-day Sectional Meeting of the American College of Surgeons at Hot Springs, Virginia, on February 26 and 27, 1951. The Homestead will be headquarters for the meeting and requests for hotel accommodations should be directed to The Homestead in Hot Springs.

(Continued on page 259)

DEATHS

DR. A. W. RHYNE

Services for Dr. Arthur Wellington Rhyne, beloved physician of Coahoma, who died November 4 at the Baptist Hospital in Memphis where he had been a patient for the past few weeks, were held November 6.

Dr. Rhyne had resided in Coahoma for the past 31 years. During this time he faithfully served the people in this section of the county. When he entered a sick room, he had the happy faculty of bringing sunshine and cheer with him

The people in the vicinity of Coahoma returned his love and devotion with warmth and deep affection. Both white and colored felt honored to call him friend.

Born in Durant, Miss., Dec. 23, 1877, he was 75 years of age. His parents were the late Roberta Horton and T. J. Rhyne. He graduated from the Durant High School and then graduated in medicine at the University of Tennessee in 1904. The university at that time was known as the Memphis Medical College. He did graduate work at Chicago University.

His first practice was at Deesonville, Miss., with his cousin, the late Dr. Horton Frizell. Three years later he went to Beulah, Miss., where he practiced until 1917 when he entered the Touro Infirmary for graduate work.

When World War I was declared, he volunteered for medical duty and served overseas with the 29th Division. He received his discharge in June 1919, and moved to Coahoma.

On May 2, 1918, he was married to Miss Helen Duntze of Memphis.

During World War II he was medical examiner for Draft Board Two, located in Coahoma and served throughout the war.

Dr. Rhyne belonged to the Coahoma Methodist Church, where he served on the board of stewards for a number of years. He was a member of the Coahoma County Medical Society and the Clarksdale and Six Counties Medical Society, and the American Medical Society. He was a Mason and a Shriner, and a member of the Friars Point and Jonestown American Legion Posts.

Besides his wife he leaves a daughter, Mrs. Fred H. Cantrell of Fort Leavenworth, Kans., and three grandchildren; two sisters, Mrs. H. W. Bailey of Memphis; Mrs. Henry Chrichlow of Vicksburg; and two brothers, S. H. Rhyne of Durant and Dr. J. Rhyne of Shelby.

DR. SAM H. WOOD

Dr. S. H. Wood, prominent physician and respected citizen of Benton County, died October 27, after an illness of several months.

Dr. Wood, a former resident of Jackson, and born in 1892 at Carthage and moved to the Trlington community, Neshoba County, when a child. He was a member of the Benton Methodist Church, the American Legion, the Mississippi Medical Society, Kappa Psi, a medical fraternity and a Mason.

He graduated from the Chicago College of Medicine and Surgery in 1917 and entered the Army as a captain in the Medical Corps, serving overseas in World War I.

He moved to Benton in 1924 and lived there until 1931 when he moved to the Canal Zone as a member of the medical staff. In 1934, he resigned and returned to Benton to resume practice and in 1949 moved to Jackson as medical officer on the rating board of the Veterans Administration. He returned in February, 1950, to Benton.

Dr. Wood leaves his widow, Mrs. Arla Stribling Wood, Benton; a daughter, Mrs. M. B. Montgomery, Jr., and a granddaughter, Arla Montgomery, both of Yazoo City; six brothers, R. S. and A. B. Wood, Sagninaw, Mich.; D. D. Wood, Oakwood, La.; Ersel and Vardaman Wood, both of Philadelphia; four sisters, Mrs. Sherman Pearson, Mrs. Irvin Willis and Mrs. I. D. Darby, of Philadelphia, and Mrs. Sybil Bryant, San Francisco, Calif., and his stepmother, Mrs. S. W. Wood, Philadelphia.

DR. J. B. HIRSCH, SR.

Dr. J. B. Hirsch, Sr., 65, Greenville physician for 41 years, died in King's Daughters Hospital October 5 of a cerebral hemorrhage. He became ill at his home 20 minutes earlier.

Born in Greenville, he attended public schools there and received his medical education at Louisville, Ky., Physicians and Surgeons College and graduated from Tulane University in 1907.

He practiced in Lake Providence, La., and Ramer, Colo., for two years and returned to Greenville.

Survivors include two sons, Dr. Jerome B. Hirsch, Jr., of Greenville, and Dr. Joe R. Hirsch of Houston, Texas; a brother, Emile Hirsch and two sisters, Mrs. Elias Schwab and Mrs. Camille Schwab all of Memphis.

DR. J. I. MAYFIELD

Services for Dr. James I. Mayfield were held October 12 from Lowrey Memorial Baptist Church, conducted by Dr. Wilfred C. Tyler, assisted by the Rev. Robert Wooddy. Burial was in Blue Mountain Cemetery. Nance Funeral Home of Ripley was in charge. Dr. Mayfield was 70.

Dr. Mayfield died in the Baptist Memorial Hospital in Memphis from a heart ailment. He was taken to the hospital a week before his death. He had been in retirement for three years.

Dr. Mayfield was born in Union County, Miss. He was a son of A. J. and Lydia Gray Mayfield. He was graduated with an M.D. degree from the Medical College of the University of Tennessee in Memphis. He married Miss Oda Swain of New Albany in 1913.

The Mayfields moved to Blue Mountain in 1922 where he continued his practice until forced into retirement by ill health. He was for some time physician for Blue Mountain College. He also served as president of the Bank of Blue Mountain.

He was a Mason and served as president of the Northeast Mississippi Medical Society.

Dr. Mayfield leaves, besides his wife, two children, Mrs. Ruley Lamar of Grenada and Dr. Henning Mayfield of Memphis, and these brothers and sisters: J. R. Mayfield of Oxford, W. B. Mayfield of New Albany, B. F. Mayfield of Etta, Talmadge Mayfield of Oceanside, Calif., Mrs. D. A. Pritchard. Mrs. U. G. Smith and Mrs. C. M. Lagrone, all of Etta, and Mrs. Straud Nowlin of New Albany.

DR. R. C. RICHARD

Dr. Richard C. Richardson, beloved and widely known physician who practiced in Pheba almost 50 years, died at his home after a lingering illness. He was 72.

Born in Down, Mo., on July 18, 1878, Dr. Richardson was the son of R. M. and Elizabeth Charlton Richardson. His parents came to the United States from Wales.

A member of the American Medical Association. Dr. Richardson received his final medical training at Baptist Hospital in Memphis. He started his practice in Old Cumberland in Webster County in 1901. moving to Pheba in 1905.

He was a member of the Baptist Church and a Mason.

Dr. Richardson leaves his wife; one daughter, Mrs. Cecil Fitzgerald of Pheba; two sons, Charlton Richardson of Grenada, Miss., and Lt. Carey Richardson, stationed with the Navy in New York; four sisters, Mrs. Edith Stillwell, Mrs. Marie Ireland and Mrs. Fannie Sharpe, all of Memphis, and Mrs. Annie Furlington of New Orleans; and two brothers, Will Richardson of Memphis, and J. A. Richardson of Indianola, Miss.

DR. R. L. DONALD

Dr. Robert L. Donald, 46, prominent Meridian physician died November 2 in Anderson's Infirmary 15 minutes after he had admitted himself after a sudden illness.

On reaching the hospital, Dr. Donald telephoned to Dr. Joseph B. Price, and then went to bed. He died of a heart attack before Dr. Price reached the hospital.

He is survived by his wife, Mrs. Mary Neville Donald; two daughters, Misses Mary and Susanne Donald; a son, Robert L. Donald, Jr., all of Meridian, a sister, Mrs. Bessie Donald Mills, Shreveport, La.; a brother, James Guthrie Donald, Washington, D. C.; three half-brothers, Ben H. Donald, Jr., New Mexico; George Donald, Los Angeles, Calif, and Howard M. Donald of Inglewood, Calif.

After attending Mississippi State College, he finished in medicine at Jefferson Medical College at Philadelphia, Pa.

He served as a medical officer for five years in World War II, three years of which were overseas.

DR. J. J. HARRY

Dr. John Jason Harry, 96, pioneer coast resident, died at his home in Handsboro Tuesday morning.

A native of Alabama where he was born near Greensboro, he came to the Coast in 1878 after graduating in medicine from Tulane University. He located in Ocean Springs.

LAWRENCE F. BURT

Doctor Lawrence W. Burt passed away on September 29, 1950. He was born in Poplarville, Mississippi, on March 24, 1910, and at an early age moved with his family to New Orleans. He attended the New Orleans Academy and then entered Tulane University, where he took his pre-medical work and received his M.D. in 1936.

After graduating he was appointed to an internship at Touro Infirmary, and following this he had a one-year residency in urology. The next year he spent as resident in obstetrics and gynecology, and as chief resident for the hospital. In January, 1939, Doctor Burt was appointed administrative assistant to the superintendent at Touro, and served in this capacity until 1941. In 1941 he left Touro and went to Mississippi to enter private practice. Shortly thereafter, with the advent of World War II, he volunteered for duty in the medical corps of the United States Army, and served with the rank of major until his discharge in 1946.

After his discharge from the Army, Doctor Burt returned to New Orleans where he re-entered private practice.

Doctor Burt was a member of the Orleans Parish and Louisiana State Medical Societies, the Jones County and Mississippi State Medical Societies, and the American Medical Association. He was an active member of the staffs of Touro Infirmary and the Sara Mayo Hospital.

DR. HILTON CARR

Dr. Hilton Rice Carr of Jackson, Miss., former superintendent of the Shelby County Hospital, died at the Baptist Hospital November 17 following an illness of two months. He was 63.

Born in Pine Valley, Miss., Dr. Carr spent most of his life in Mississippi. He attended the University of Tennessee Medical College here and served during World War I as a captain in the Medical Corps. He was district surgeon at Pont Levoy, France, for a year.

Dr. Carr returned to Memphis shortly after the war and practiced there as a diagnostician for 10 years. He was appointed superintendent of the Shelby County Hospital in March, 1931, and resigned in 1935. He was in ill health for a number of years as the result of a major operation.

Recently, he had been a member of the Veterans Rating Board at the Veterans Administration Office in Jackson, Miss. He was named to Who's Who Among Physicians and Surgeons in 1935.

Dr. Carr leaves his wife, Mrs. Irene Pearce Carr of Jackson, Miss., and Memphis; a daughter, Mrs. T. J. Cavallo of Memphis; three sons, Hilton R. Carr, Jr., of Miami, Frank P. Carr and Thomas J. Carr, both of Memphis; a brother, Harris G. Carr of Yazoo City, Miss.; two sisters, Mrs. Virginia Stovall of Biloxi, Miss., and Mrs. Frank Swayze of California. and 10 grandchildren.

FOR SALE BY OWNER

Low-priced, lovely 5-bedroom and 3-bath home, with double garage, servant house, and two-acre grounds, all in excelent condition. Located in small town, on fine highway, which, with large surrounding territory, is badly in need of a doctor. Write 4131 Council Circle, Jackson, Mississippi, or telephone 5-3265 Jackson, Mississippi. 3t

INTERPRETING MEDICAL LITERATURE

PEDIATRICS

Sudden and Unexpected Natural Death in Infants and Young Children, S. M. Rabson, Office of the Chief Medical Examiner, New York City and the St. Joseph Hospital, Fort Wayne, Ind., J. Pediat. 34:166-73, Feb. 1949.

"Sudden and unexpected natural death in infants and young children as seen in a group of 69 patients under 5 years of age is discussed. Most of these deaths occurred before 2 years of age. Among the Negroes up to 5 years of age, the proportion of sudden and unexpected natural death greatly exceeded their proportion of the population.

"Diseases of the respiratory system accounted for almost 80 per cent of the cases and 90 per cent of these were "acute bronchitis" or "bronchopneumonia." The diagnosis of "asphyxia by inhalation of vomitus" as the primary cause of death should be made with caution, since aspiration of vomitus is a terminal phenomenon provoked by the anoxia of the basic condition.

"Gastro-intestinal causes of sudden and unexpected natural death include acute appendicitis with peritonitis, and ingestion of poisons. Before ascribing a rapidly fatal illness to poisoning, an effort should be made to perform chemical analyses. Meningitis, brain tumor and pachymeningitis hemorrhagica interna are among the relatively few maladies of the central nervous system causing sudden death.

"The significance of an enlarged thymus in the production of sudden and unexpected natural death is still not clearly understood. Pulmonary embolus, acute pericarditis in pneumonia, and congenital cardiac anomaly should not be overlooked.

"Some instances cannot be explained. These occur most frequently in normal infants between 4 and 8 months of age. Complete autopsy, including bacteriologic and chemical examination, should be done and the findings correlated with the clinical history. When the explanation is not clear, inability to fix the cause of death should be admitted."

COMMENT: The article described for this month is very timely. I think it is well for all of us to at least review in our minds the pitfalls that may come to any of us in attempting to make a diagnosis in some of these cases.

VA PATHOLOGY

CASE REPORT

Chief Complaint: This 36-year-old white grocery clerk was admitted to the VA Hospital, Jackson. Miss., 6-6-49, for cough, fever, weight loss, and edema of feet.

Past History: One brother died of tb. 20 years ago.

Present Illness: In addition to the chief complaints there were also intestinal symptoms: Diarrhea for 4 years with yellow, foamy stools; stomach pains relieved by belching, partly by food; vomiting and sore tongue. There was xeroderma of legs.

Present Examination: Emaciated man with prominent neck vessels and purplish discoloration of lower legs. T. 99.8 degrees; Pulse 90; BP 120/68. Heart: Normal. Lungs: Consolidation and moist rales in left posterior base. Abdomen and other examinations negative.

Laboratory: Urine negative. CBC: Hg. 11.5 grams; RBC 3.4; WBC 6,100; Neut. 54; Lymphs. 40; Eos. 6. Sed. rate 12 mm. BUN 10.8. Fishberg: Maximum Sp. Gr. 1.017. Sputum: concentrate negative for AFB. X-ray (6-6-49): thin infiltration changes in both upper lobes with single nodules in first left and second right interspace; rectangle-shaped density at left border of heart and diffuse thickening of bronchial tree.

Course: Pt. ran low-grade fever interrupted by an afebrile interval of 3 months. He had persistent cough, productive of moderate purulent sputum which on numerous occasions was negative for tb. showed extension of infiltration in left lower lobe. and malignant cells. During August chest films four bronchoscopies and two bronchial aspirations were negative for tb. and malignancy. Despite high calorie diet, vitamins and blood transfusions. pt. remained emaciated and moderately anemic and continued to have diarrhea interpreted as sprue syndrome by one observer. Shortly after admission pt. had recurrence of epigastric and RUQ cramp-like pains, nausea and vomiting after meals. Gastric analysis showed anacidity after histamine and GI series 8|10 revealed retention of barium in stomach and duodenum with constant tender deformity of duodenal cap. suggestive of chronic duodenal ulcer with moderate obstruction. There was also enlargement of liver and spleen. Parenteral feedings and Co Tui regimen (protein hydrolysate. dextrimaltose, amphojel) resulted in slow improvement and 4 lbs. weight gain. Additional treatment consisted of postural drainage and aerosal penicillin. An IVP 10/4 showed double ureter and pelvis right and deformity of left renal calices considered suspicious of renal tumor. In October and November pt.'s general condition declined precluding a contemplated bronchogram. In December there was a flare-up of lung symptoms with dyspnea, cyanosis, temperature to 101 degrees. and extension to left upper lobe. Penicillin and streptomycin were without influence. Chest x-ray 12-20-49 revealed further extension and contralateral spread of a nodular process with irregular coalescence. Pt. remained febrile. dyspneic, weak, lapsed into coma and died 12-25-49.

ABSTRACT OF DISCUSSION

Discussing the differential diagnosis, Dr. Benjamin Folk ruled out pulmonary tb. because of persistent negative sputa and considered as most likely possibility mycotic lung infection (blastomycosis, moniliasis, coccidiosis, or histoplasmosis). Dr. T. E. Wilson agreed with this diagnosis. Dr. J. A. Gallogly inquired about physical findings in the abdomen and possibility of tumor. Dr. Leo Elson stated that there was only epigastric tenderness and Dr. J. W. Evans interpreted the distorted duodenal cap as due to pulling rather than to pushing up by a mass. Dr. R. J. Walsh raised the question of pulmonary amebiasis. Dr. T. M. Dunn commented on the unexplained aspects of the anemia, large liver and spleen and duodenal changes.

Anatomical Diagnosis

(H. N. Naumann, M.D.)

1. Pulmonary tuberculosis, fibro-caseous, advanced; consolidation and multiple cavities, left lower lobe; consolidation, right base; diffuse nodular, both lungs.
2. Tuberculous lymphadenopathy, tracheal, bronchial, mesentric, extensive.
3. Splenomegaly, moderate.
4. Cachexia, extreme.

Postmortem bacteriology: Numerous acid-fast organisms in smears from lung cavities.

RESOLUTION

(The following resolution is submitted by the executive secretary of the Board of Trustees of Mental Institutions of which Dr. Henry Boswell is the former vice-chairman.)

BE IT RESOLVED THAT:

WHEREAS, HENRY BOSWELL has been an active member of the Board of Trustees of Mental Institutions since its creation and organization on March 16, 1947; and

WHEREAS, it has become necessary for the said HENRY BOSWELL to not be reappointed to this Board in order to protect and preserve his physical well-being; and

WHEREAS, HENRY BOSWELL has given of his time, talent and experience in an untiring and unselfish manner in order to accomplish the purpose for which the Board was credited; and

NOW, THEREFORE BE IT RESOLVED that this Board does hereby declare and publish its regret at losing the services of this native son of the State of Mississippi, who has labored so earnestly and unceasingly in rendering aid and assistance to the unfortunate and helpless people of Mississippi; and

BE IT FURTHER RESOLVED, That this Board express its appreciation to HENRY BOSWELL for his counsel and guidance in its labor, and commend him for his efforts in behalf of the people of the State of Mississippi.

THEREFORE, BE IT FURTHER RESOLVED, That HENRY BOSWELL will always have our affection and gratitude as a fine Board Member and Fellowman, and our hope that the Greatest Physician of all will preserve and restore him to a more useful and beneficial life."

STATE BOARD OF HEALTH

FELIX J. UNDERWOOD, M.D.

PUBLIC HEALTH SERVICES

by

ANDREW HEDMEG, M.D., Assistant Director
Division of County Health Work

Everyday in Mississippi there are dozens of people receiving vaccinations and immunizations, getting chest x-rays, taking blood tests. Expectant mothers are attending classes or lectures, where they will learn about proper care of the child they will soon have. Hundreds of babies are being visited by trained nurses. Throughout the state, dairies, water supplies, and foodstuffs are being inspected to determine their safety; and numerous other activities are constantly going on. All of these fall under the heading—"Public Health Services." These services are offered and received in every one of Mississippi's 82 counties so routinely that the average citizen is hardly aware of how extensive the services are and how they are administered. The public health program in Mississippi has a well-earned reputation for excellence, but few Mississippians know even as they receive one or more of the health department services that they are participating in an enormous state-wide program designed to safeguard the health of the state.

The formulation of such a program and its effective execution are not simple procedures. The modern concept of public health is very broadly divided into seven categories: 1) Preventable Disease Control, 2) Maternal and Child Health, 3) School Health Services and Health Education, 4) Sanitation, 5) Laboratory Service, 6) Vital Statistics, and 7) Public Health Administration. Each of these categories is dealt with on the state level by a specific division of the Board of Health. These divisions not only formulate public health policies but also supply consultant services to local health departments. This unifying, direction-giving part of the public health program is of course basic to an effective large-scale program. It has been thoroughly demonstrated, however, that the policies and procedures can best be carried out on a county or district basis. Thus, you will find county, bi-county, tri-county, and district health departments scattered throughout the state. At the present time 78 of Mississippi's 82 counties have full time health department services. The policies which are to be used by the entire state can be somewhat altered to fit the needs of each community.

Although the success or failure of any program cannot be measured in terms of quantity alone, statistics for health services made available to Mississippians show that many people have been reached and served—to the betterment of their own and their neighbors' health. There is no more active or important branch of service in the health departments than control of preventable diseases. It was such diseases, in epidemic form, that led originally to the formation of a State Board of Health and local health departments. Today the county health departments perform a huge task in immunizing for diphtheria, measles, smallpox, typhoid, and whooping cough. In 1949, there were 333,161 such immunizations administered. Almost 9,000 hookworm treatments were given, and thousands of people with communicable diseases were paid visits or otherwise given supervision by medical and nursing personnel of county health departments. Venereal diseases continue to be controlled more effectively than ever through investigator, medical, and nursing services, and public health treatment centers. In the continued efforts to eradicate tuberculosis, 190,175 people received chest x-rays last year. As modern diagnosis, treatment, and prevention methods become known, they will be incorporated in the state-wide preventable disease control program and even greater progress should be the result if there is citizen cooperation and participation.

During recent years more and more attention has been focused on the good health of mothers and children. In the field of public health this attention has resulted in very active divisions of maternal and child health. Expectant mothers who are financially unable to regularly visit a private physician can receive medical and nursing consultation at local health departments. Last year in this state there were 35,000 admissions to this type of service. County health officers and public health nurses made thousands of calls on medically indigent mothers and infants. Almost 30,000 infants were admitted to local health departments for medical and nursing service last year, and almost 55,000 medical and nursing visits to infants were made. That the quantity of such services is producing results is evidenced in the steady downward trend of maternal and infant deaths during the past twenty-five years.

Since 1942 there has been in operation throughout the state a school health program which has touched thousands of preschool and school children. Last year county health department personnel served preschool children well over 100,000 times either in the office or through visits. In communities where preschool children are reached, every effort is made to find all dental and physical defects and to get them corrected before the child enters school. Examinations and treatment are of course necessary during a child's school years as well as his preschool years. Last year almost 45,000 school-aged children were examined through the operation of school health programs. Among the results of these examinations were 15,856 dental corrections and over 5,000 physical defect corrections. Through an appropriation for correction of defects among children from medically indigent families the State Legislature made possible a large number of these corrections. Commendable indeed is the cooperation of private physicians and dentists in rendering the necessary medical and dental services on the school health programs. The funds are available to each county on a matching basis, fifty per cent of the funds to be furnished by some civic organization in the community.

When someone asks just what has the health department done for him as an individual, he has but to consider the activities of the Sanitation Division. The sanitation work done by each health unit reaches everyone, whether he is conscious of the fact or not. Sanitation inspection is made of public buildings, camps, schools, barber shops, beauty parlors, foodhandling establishments, dairies, dairy plants, and other places whose insanitary condition can seriously undermine the public's health because all citizens are almost daily in contact with one or more of them. Health departments furnish consultant service on water systems, both public and private, and on sewerage systems, both municipal and private. Anyone at all familiar with such diseases as typhoid and dysentery will realize the importance of safe water supplies and proper sewage disposal. Sanitation services also include pest control. Last year rat eradication service was given on 68,000 premises, and over 300,000 were sprayed or dusted to rid them of other pests.

Many also have been served by the State Hygienic Laboratory, for private physicians all over the state send specimens to the laboratory for examination. In 1949, a total of 411,686 specimens were examined in the laboratory—including water, milk, blood, feces, etc.

Of greater importance than most people realize is the work done in vital and public health statistics. Records of births, deaths, marriages, and divorces are made and preserved, and certified copies of the records are always available to individuals and agencies in need of such documents. Among other things, public health statistics include tabulations of reportable diseases, and analyses of these tabulations. Work of this nature benefits the entire population, for through these records, tabulations, and analyses, public health workers can readily determine the health problems in greatest need of emphasis.

Making use of all the previous categories of public health is the Health Education Division, whose task it is to help everyone in the state understand the necessity and best methods for safeguarding his own and his neighbors' health. Through such means as radio, newspapers, pamphlets, and films, the public is informed on health subjects. A large part of the work of public health doctors, nurses, sanitarians, VD investigators, and clerks is of a health education nature. Public health educators have been employed in a number of counties to work more closely with school teachers, parents, and other adults for improved community use of health education materials to promote personal, family and community health.

Although these activities of the local health departments require vast amounts of equipment and supplies, the most vital necessity in carrying them out is trained public health personnel. In 1949, there were 229,270 citizens admitted for service in the local health departments. Administering this vast number of services were 830 state and local health workers, both professional and clerical. The 78 counties with full-time health department services have personnel rendering at least medical, nursing, and sanitation service. In counties with more expanded programs and in better financial condition, there will be found especially trained public health educators, dental hygienists, laboratory technicians, sanitation engineers, venereal disease investigators, nutritionists, child guidance workers and others. Many counties will employ more of these special workers as soon as trained personnel are available.

The growth during recent years of public health work in Mississippi is a source of considerable pride to everyone who has had a part in the program. It is our hope that the next decade will be as greatly benefited as the past one has by public health service and that continued advances will be made toward controlling diseases and improving health.

* * *

Mississippi Participation in American Public Health Association Convention

The state health officer and representative staff members of the Mississippi State Board of Health who were responsible for program participation attended the seventy-eighth annual meeting of the American Public Health Association, which was held in St. Louis, Missouri, October 30 - November 3, 1950.

Dr. Felix J. Underwood, State Health Officer, is an elected member of the governing council of the American Public Health Association and was re-elected vice-president of the American Board of Preventive Medicine and Public Health for a three-year term. In addition, Dr. Underwood attended the scientific sessions of the association and a meeting of the State and Territorial Health Officers.

Dr. Don W. Griswold, Medical Consultant with the Mississippi State Board of Health, presented a paper before the Epidemiological Section on "Food Poisoning, a Study of Thirty-Four Outbreaks."

Dr. A. L. Gray, Director of Preventable Disease Control of the Mississippi State Board of Health, discussed a paper by Dr. Justin M. Andrews and Dr. G. E. Owensby on "Malaria Eradication in the U.S.A."

Dr. R. N. Whitfield, Director of the Division of Vital Statistics of the Mississippi State Board of Health, served on the committee for the nominations of officers of the Vital Statistics Section of the American Public Health Association.

Miss Cassie B. Smith, Associate Director of the Division of Health Education of the Mississippi State Board of Health, led a discussion on "Program Planning in Health Education" before the conference of state directors of health education. In the public health education section she served as chairman of a committee on interpretation and also as chairman of the committee on nominations for officers of the section.

Other members in attendance from Mississippi were Miss Louise Holmes, Director of Public Health Nursing; Dr. Virginia Downes, Director of Maternal and Child Health; Dr. R. L. Wyatt, Director of Marshall County Health Department; Dr. Lenore Bajda, Assistant Director of Harrison County Health Department; Miss Cleta Brinson, Executive Secretary to the State Health Officer.

Excellent papers and discussions were given before the following scientific sections: public health engineering, epidemiology, industrial hygiene, nutrition, laboratory, maternal and child health, school health, health education, nursing, health officers, and dental health.

Among the topics of general interest were the role of public health in civilian defense, public health aspects of atomic energy, new international programs in public health, local responsibility for world health, and other subjects and procedures for which each scientific group is responsible. Special emphasis was given respiratory diseases, poliomyelitis, measurement and control of chronic diseases, laboratory and engineering procedures, care of the premature infant, problems of school health, and methods of motivating people, and communicating information through public health education.

Excellent technical exhibits were on display; television was demonstrated, and scientific movie films were previewed. A highlight of the scientific exhibits was a continuing demonstration of examinations in a modern multiphasic screening program.

The Sedgwick Memorial Medal "For Distinguished Service in Public Health" was awarded Dr. Rolla Eugene Dyer, recently Director of the National Institute of Health, Bethesda, Maryland, now Director of Research at Emory University, Atlanta, Georgia.

NEWS AND COMMENT

(Continued from page 252)

The program for this meeting will include new surgical motion pictures, a special program on trauma, a cancer symposium, and panels or papers on The Effect of Vasodilator Drugs on the Circulation of the Extremities, Chest Injuries, Fractures about the Ankle Joint, Neck Surgery, Peptic Ulcer, Cancer of the Tongue and Mouth, Cancer of the Cervix, Cancer of the Lung, Injuries to the Biliary Ducts, Ulcerative Colitis, Surgical Aspects of Acute Head Injuries, Rehabilitation of Severely Burned Patients by Plastic Surgery, Emergencies Arising During Operation, and Surgery of the Colon, Anus and Rectum.

THE NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

The fourteenth annual meeting of the New Orleans Graduate Medical Assembly will be held March 5-8, headquarters at the Municipal Auditorium.

Nineteen outstanding guest speakers will participate and their presentations will be of interest to both specialists and general practitioners. The program will include a panel discussion on ACTH and cortisone, a series of talks on trauma and neoplastic disease, a review of the application of radioactive isotopes in medical practice, clinicopathologic conferences, round-table luncheon discussions and many other features of special interest.

The Assembly has planned another interesting postclinical tour to follow the 1951 meeting in New Orleans. On Saturday, March 10, a party composed of doctors and their families will leave by plane for Panama, Medellin and Cali, Columbia; Quito, the capital of Ecuador and Lima, Peru. The group will return to New Orleans on Sunday, March 25. Details and a complete itinerary are available at the office of the Assembly, Room 103, 1430 Tulane Avenue, New Orleans 12, La.

PP SURGICAL

The fifth congress of the Pan-Pacific Surgical Association will be held in Honolulu November 10-21, 1951.

The object of the Pan-Pacific Surgical Association is to bring together surgeons from countries bordering on the Pacific Ocean so as to permit the exchange of surgical ideas and methods and to develop a spirit of good fellowship among the various races represented. Although it was planned that meetings would be held every three years, world events have permitted but four conferences since the organization was conceived—the first in 1929 and the last in 1948.

Woman's Auxiliary

OFFICERS

President ....Mrs. W. H. Anderson
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Parliamentarian ....Mrs. R. C. Eley
Moss Point
Corresponding Secretary ....Mrs. Stanley Hill
Corinth

EXECUTIVE BOARD MEETING

Members of the executive board gathered at the Robert E. Lee Hotel in Jackson on November 28, 1950, for definite crystallization of work for the year. With Mrs. W. H. Anderson, state president, presiding, the following pertinent undertakings received special emphasis:

1. Doctors' wives are urged to concentrate on deserving and winning the public good will, with particular effort on the local community level.

2. Organization is the next most important step. Where there are as many as three or four doctor's wives in a county, they should form a unit.

3. Legislation will carry on the program of enlightening and active enlistment of local organizations willing to state a policy of disapproval of compulsory health insurance. Doctors' wives are urged to influence their own local clubs to make statements opposing state medicine.

4. Reports were brought on the survey of the old-age indigent in the state.

5. Nurse recruitment is shaping a new program, with auxiliaries being encouraged to sponsor individually a student nurse's training.

6. "Today's Health" should be in every doctor's office, every school library, every beauty parlor. This is a local level responsibility.

7. Participation in the Jane Todd Crawford project of the Southern Medical Auxiliary is undertaken again, with the Research and Romance of Medicine chairman directing its policies.

8. Councilors are urged to visit auxiliaries in their districts pressing the program of the state organization.

The group went on record as endorsing "Woman's Surgeon," life of Marion Sims, written by Dr. Seale Harris of Birmingham, Ala., as the most deserving biography of 1950 for the Pulitzer Prize.

Members of the Executive Board who attended the annual board luncheon are, seated, left to right: Mrs. John B. Howell, Sr., Canton; Mrs. J. K. Avent, Grenada; Mrs. John B. Howell, Jr., Canton; Mrs. A. Street, Vicksburg; Mrs. A. E. Brown, Columbus; Mrs. W. H. Anderson, Booneville; Mrs. George Owen, Jackson; Mrs. T. A. Baines, Jackson; standing, left to right: Mrs. L. J. Clark, Vicksburg; Mrs. Lamar Arrington, Yazoo City; Mrs. J. W. Lipscomb, Jackson; Mrs. W. L. Waldron, Jackson; Mrs. Lowry Rush, Meridian; Mrs. Richard Clark, Hattiesburg; Mrs. Harvey F. Garrison, Sr., Jackson; Mrs. Stanley Hill, Corinth; Mrs. W. K. Stowers, Natchez; Mrs. S. L. Bailey, Kosciusko; Mrs. Henry Boswell, Sanatorium; and Mrs. R. C. Eley, Moss Point.

Perforated Peptic Ulcer with Special Reference to the Walled-Off Type*

JAMES F. CRENSHAW, M.D.†
Birmingham, Alabama

THE diagnosis and treatment of perforated peptic ulcer is by no means a new problem. Recent investigations have shed new light on the so-called walled-off or sealed-off type of perforation. Perforated peptic ulcers are usually classified in three groups. 1) The acute, classical type presents the acute surgical abdomen with free air in the peritoneal cavity and demonstration of gas beneath both domes of the diaphragm in the majority of cases. 2) The second type of perforation, the so-called subacute type or the "Formes Frustes" of Singer and Vaughn,[1] exhibits spontaneous closure. In this type of perforation, the symptomatology up to the point of the actual blow-out is practically identical in most respects to that of perforation in the acute, classical case without closure. In this "Formes Frustes" type, the pain is usually less agonizing and the prostration accompanying the pain is not so overwhelming as in the acute classical type. The same board-like rigidity of the upper abdomen, along with the marked tenderness, will be elicited in this type of perforation as in the classical type. Usually in from two to ten hours after the onset of symptoms, the patient is in a state of comparative comfort, the majority of the intense symptoms having disappeared by this time. 3) Information relative to the third type, so-called walled-off or chronic variety, has been scarce until recently. Cassell's[2] work has served to clarify many of the diagnostic and therapeutic points regarding this too-often unrecognized abdominal condition. This sealed-off type may be further subdivided into a) medical, b) surgical, and c) chronic perforation with an accessory pocket. The accessory pocket is usually due to a benign ulcer, but occasionally an ulcerated carcinoma will perforate and then seal off.

In dealing with ulcers manifesting unusual types of abdominal distress and those refractory to the accepted medical régime, a diagnosis of sealed-off perforation must be entertained. It is believed by Bockus[3] that sealed-off perforations involving the pancreas, liver, or lesser omentum make up approximately 25 per cent of the intractable group not responding to adequate medical therapy. The pin-point-leak perforations complicating chronic recurring peptic ulcer probably occur much more often than formerly recognized.

Cassell's[2] work regarding the clinical picture of this walled-off type is most revealing. In his study of one hundred cases, the total duration of previous ulcer history averaged several years, although some of his patients had symptoms for only a few months. A small number gave no history of ulcer, however, the majority of patients had rather typical ulcer symptoms in the past. The diagnostic features which suggest a sealed-off peptic ulcer are: 1) a change in ulcer pattern; 2) an increase in severity of the ulcer type pain; and 3) radiation of pain to the back. The change in ulcer pattern is usually gradual, sometimes insidious, but may be sudden. Whereas the patient formerly experienced relief of discomfort from food, after the perforation has walled-off this relationship ceases and no apparent benefit is derived from the intake of milk and the soft type foods. The pain is often more localized with tenderness and soreness experienced in the epigastric region responsible for the perforation. Nausea and vomiting or hemorrhage at times will alter the previous ulcer pattern. The usual type of ulcer pain is intensified. Often, however, the patient is able to continue his ambulatory activities, but the majority of the time a bed is welcomed by most. The pain often requires opiates for relief. The usual medical treatment of frequent feedings, antiacid, and antispasmodics tend to be of much less benefit. Even continual intra-gastric drip or gastric suction may often be without effect. In attempting to differentiate the walled-off type of perforation from the "Formes Frustes" and classical varieties, a physical examination is of very little benefit. Cassell[2] found in his cases that the hemoglobin was low in those suffering from bleeding but no remarkable abnormalities were discovered in the WBC and gastric acidity. Serum amylase determinations are of value in those perforations involving the pancreas. The x-ray can at times be of help in the differential diagnosis of walled-off perforated peptic ulcer.

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In the differential diagnosis of perforating peptic ulcers, regardless of the type to be differentiated, we must necessarily consider other possibilities for the acute abdomen. Gastrointestinal conditions to be carefully considered are acute appendicitis, acute pancreatitis, mesenteric thrombosis, ruptured diverticulum of the colon, acute intestinal obstruction, biliary colic with gangrenous perforation of the gallbladder, perforation of the peptic ulcer within a Meckel's diverticulum, ruptured ulcerating carcinoma of the stomach, acute gastritis, rupture of herniated thoracic stomach, and acute volvulus of the stomach. Gynecological conditions which must be eliminated include a ruptured ectopic pregnancy and twisted pedicle of an ovarian cyst. Renal colic must also be ruled out. Non-surgical conditions must also be differentiated from acute perforated peptic ulcer. Such conditions include coronary thrombosis, pneumonia of the lower lobes, pleurisy, crisis of central nervous system syphilis, acute food poisoning, lead colic and arachnidism.

The **site** of a walled-off perforation is usually found on the posterior aspect of the stomach or duodenum with the base of the ulcer often fixed to the pancreas, liver, or gastro-hepatic omentum. Fistulous tracts are sometimes known to occur between the colon or gallbladder and the point of gastro-duodenal perforation. In analyzing the structures involved by his one hundred cases, Cassell[2] found the pancreas involved in 76, the liver in 9, and others in 15. Admittedly the specific lesion can be found in only a small percentage of cases. The finding of a small gas bubble in the subhepatic area just above and to the outside of the duodenal loop is helpful in demonstrating this lesion. The bubble is best seen on spot films in the erect position, utilizing the compression technic. (Feldman[4]) The bubble must be differentiated from 1) an air-filled diverticulum; 2) colonic gas; 3) duodenal gas as in an inverted loop; 4) subhepatic abscess; 5) emphysematous cholecystitis. Small amounts of fluid often flatten the base of an air bubble.

Sequelae often seen in the walled-off type of perforation are obstruction in the pyloroduodenal region, hour-glass stomach, abscess of peritoneal cavity and between the layers of gastro-hepatic omentum.

Treatment of the acute classical type of perforation is, of course, always surgical at the earliest possible moment. In the "Formes Frustes" type of perforation, it was found that many of these cases healed spontaneously without operation, but if there is any question as to the perforation being sealed, operation is insisted upon. Regarding the treatment of the so-called walled-off type of perforation, each case must be carefully evaluated as an individual problem. In some conservative therapy may be the wisest choice. Barber and Madden[5], in reporting 91 cases of gastroduodenal perforation, handled five by elective conservative management without a death; of the remaining 86 operated upon, 11 deaths occurred (12.8 per cent). The following criteria were considered before deciding upon conservative treatment: 1) duration of symptoms; 2) general condition of the patient; 3) subjective symptoms; 4) objective findings on abdominal examination. It should be emphasized that upon opening the abdomen of the perforated suspect and finding a well-sealed-off perforation, no attempt should be made to break down the protective barriers already established, in order to search for the site of the blow-out. To undertake such is often disastrous, as a localized inflammatory process is converted into a diffusing peritonitis. Colonel Seeley[6] of the U. S. Army reported 34 cases of perforated duodenal ulcer treated in his surgical service without operation; there were no deaths; in only three did complications occur. Therapy involved continuous, effective gastric decompression, intravenous fluids and the use of penicillin and sulfadiazine. He states, however, his method is to be used only where the patient can be closely observed, or where operative treatment is unobtainable. Bingham reports on 62 cases handled conservatively with a mortality of 11.3 per cent. A walled-off ulcer, not operated upon originally and not responding to adequate, prolonged medical care, will often require surgical intervention later. Healing is often difficult in this group because of the inability of the ulcer scar to retract from its attachment to the pancreas, liver or lesser omentum.

All perforated peptic ulcers do not necessarily require operation, there being a selected group which may be handled satisfactorily on a conservative, medical basis. Certain of the walled-off perforations fall into this latter group. If doubt exists as to the most efficacious procedure for the patient, operation by all means is to be undertaken.

Case Report

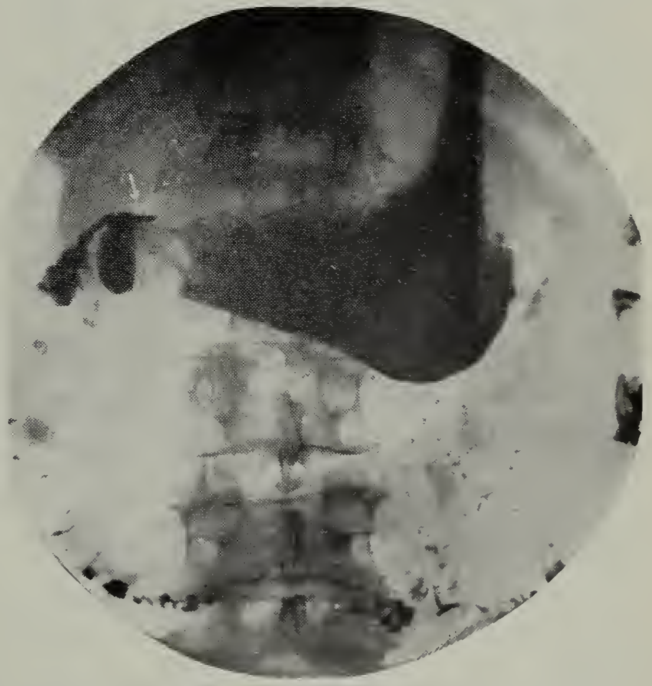
A 56-year-old, white male was admitted to the clinic because of mid-epigastric pain of one year's duration. The pain began in the center of the epigastrium and radiated laterally under both costal margins, usually having no relationship to food intake, relief being obtained by baking soda. The severity of the pain often produced insomnia. Often nausea and vomiting occurred about one hour after meals. In recent weeks, there was radiation of the pain to the back in the region of the left scapula. Several x-rays had been taken of the upper digestive tract, and all were reported as "nervous indigestion." Two months ago, however, another clinic reported an ulcerated stomach. On the second day of the clinical examination, while in a hotel, a severe episode of epigastric pain occurred, which radiated into the lower left chest and around into the area just below the left scapula. The severity of the pain necessitated night call by a clinic doctor. The following morning the upper epigastrium was slightly tender and sore; the left subscapular area was also sore. No nausea, vomiting or bowel upset was experienced. The patient had formerly been a heavy drinker and has used about 40 cigarettes daily for several years.

The physical examination was essentially normal aside from a moderate degree of generalized abdominal tenderness, more pronounced in the mid-epigastrium and left upper quadrant; the right upper quadrant also showed a slight degree of tenderness.

Routine urinalyses and blood studies were essentially normal. No blood was found in the stool, which was otherwise negative. Gastric analysis showed 0° free hydrochloric acid fasting and 50° after alcoholic stimulant. An electrocardiogram was within normal limits.

Chest x-ray, barium enema and cholecystogram were normal. The upper G-I series showed a slight cardiospasm and a moderately hypertonic stomach without evidence of intrinsic lesion; a moderate pylorospasm was present. The duodenal cap was quite spastic with a slender projection extending from the postero-lateral wall; a small air bubble was seen just above the deformed cap and thought to represent a walled-off perforation of small size.

The patient was seen by our surgeon, Dr. Claude Blackwell, who also thought the case represented a walled-off perforation of a duodenal ulcer. It was mutually agreed that since the clinical picture was probably that of a sealed-off perforation, which was apparently localized, without evidence of a diffuse peritonitis, that conservative management was the treatment of choice. Accordingly, the patient was given penicillin, atropine-phenobarbital first by hypo and then by mouth, and calcium carbonate powders. After three days of careful observation, while on glucose, saline, vitamins intravenously and protein hydrolysate, oral feedings of a milk-cream mixture were begun. The patient's abhorrence of the gastric tube blocked satisfactory use of this procedure. (Banthine was used in the early days of the treatment but was discontinued since it produced diarrhea and seemingly gastric irritation; a former treatment several weeks previously had brought on the same effects.) After 19 days of conservative therapy in the hospital, the patient was discharged without symptoms, and without evidence of positive abdominal findings on physical examination.



Conclusion

A brief clinical evaluation of perforated peptic ulcer is presented, with special reference to the walled-off type. A case of duodenal perforation, believed to represent rather typically the walled-off variety, is discussed.

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Common Gynecologic Problems*

W. L. STALLWORTH, M.D.
Columbus, Miss.

IN THE treatment of diseases of the female reproductive system, one is confronted with a variety of conditions that are the result of inadequate diagnosis or treatment. These are seen by most of us daily and I shall present them in the order of their importance.

1. Urethral stricture.
2. Failure to do repair of a cystocele, rectocele, or a relaxed perineum in conjunction with hysterectomy.
3. Biopsy of the cervix and fractional curettage for biopsy before hysterectomy.
4. Subtotal hysterectomy in the presence of an obviously diseased cervix.

1. Stricture of the urethra occurs to some extent in about 10 per cent of parous women, however it is probably not as frequent since the advent of routine episiotomies. Infection of Skene's glands and chronic cervicitis also play a part in the etiology.

The urinary retention with its concomitant symptoms are frequently confused with other pelvic pathology. It is our custom to get catheterized specimens of urine on all our patients using a No. 20 Gellhorn dilator. If there is any difficulty in introducing the instrument, the patient is examined further.

This is a urological problem, but most of us in this state have to do our own female urology.

2. Very often we have patients presenting themselves for treatment who have had hysterectomies for various reasons in which no attempt has been made to repair an existing cystocele or a relaxed perineum and rectocele. Most of these cases have been for fibromyoma without subsequent treatment, either due to failure on the part of the surgeon to do a complete operation or failure on the part of the patient to cooperate.

Failure to do biopsies of the cervix and endometrium before hysterectomy is a common practice. This should always be done if possible for I am sure many of us have been surprised at the pathologist's report. It simply means that you know for an almost certainty with what you must deal, and if you have a malignancy, whether or not radiation or surgery is indicated. The generally accepted treatment of carcinoma of the fundus is radiation followed by total hysterectomy, whereas treatment of carcinoma of the cervix is radiation. All uterine scrapings should be examined whether you suspect a functional uterine bleeding or an incomplete abortion.

A case that should stress the importance of this is presented:

A 50-year-old unmarried white female came in with the complaint of spotting for about six months. For the past six days, she had had an increasingly severe metrorrhagia associated with cramps. In January 1946, she had been admitted to a local hospital with the presumptive diagnosis of functional uterine bleeding. A dilatation and curettage was done. If there was a pathological examination made, it was not noted in the hospital record.

The patient was re-admitted to the hospital in January 1950 and a D and C was done under pentothal anaesthesia. The cervix was fatulous, and with forceps, sufficient polypoid material was removed for biopsy. The uterine cramps were apparently caused from the attempt to pass this degenerated tissue.

The tissue report was adenocarcinoma, radiation resistant. Total hysterectomy was done and no radiation therapy has been given. The tumor had invaded the uterine walls high in the fundus out to the serosa. It is highly probable that this growth had been present on her first admission to a hospital.

From the number of patients seen in the past few years that have had a subtotal hysterectomy in the presence of an obviously diseased cervix, it is felt that total hysterectomy should be done in practically all instances.

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*Read before the Section on Obstetrics and Gyn. at the eighty-second annual session of the Mississippi State Medical Association, Biloxi, Miss., May 9-11, 1950.

Tyrone feels that the results from the total operation are so far superior to the subtotal that the operation should be done in almost 100 per cent of the cases. His personal series of 1500 total hysterectomies showed two deaths while there was one death in 170 subtotal operations. It is obvious to anyone why he favors the total operation.

Since 1946, we have seen three cases of carcinoma of the cervical stump and one of carcinoma of the vaginal vault following hysterectomy.

I do not like to leave the cervix in for the following reasons.

1. The immediate postoperative complications are greater because you are cutting through an infected cervix and the incidence of pelvic and femoral thrombosis is greater in these cases.
2. You leave an infected cervix which causes a discharge, occasionally bloody, from the vagina for the rest of her life.
3. Third, you have not removed a very likely source of her pelvic pain and discomfort, and she is more likely to have dyspareunia.
4. By far, the most pressing need for doing the total operation is the ever-present danger of developing a malignancy in the cervical stump. Next to cancer of the breast, this is the most frequent site of cancer in the female. The total operation then obviates the necessity of constant check-ups and observations, and the development of a cancer phobia. This is important since many of these operations are done around the time that involutional changes are in progress.

Polak in 1921 collected 256 cases of carcinoma of the cervical stump that awakened interest in the subject. Formerly, the incidence of carcinoma of the cervical stump was considered to be about 0.6 per cent. Today it is around 4 per cent and the real frequency may be higher due to the fact that many cases are not being reported.

Von Graff in 1934 reported on 1,169 cases with an incidence of 2.5 to 11.3 per cent.

Henrickson, John Hopkins, reported 940 cases of carcinoma of the cervix in which 2.3 per cent were of the cervical stump.

Ward, of the Woman's Hospital, New York, in 879 cases of carcinoma of the cervix, reported 61 cases of carcinoma of the stump, or an incidence of 6.9 per cent.

Scheffey reports an incidence of 3.6 per cent in carcinoma of the cervical stump.

These reports in my opinion are a most valid reason for doing a total hysterectomy. In my experience, it has been exceptional to find a normal cervix in conjunction with other indications for hysterectomy.

Some of the important points in operative technique are as follows:

First, the dissection of the bladder from the lower uterine segment. This should be excised all the way across and the bladder pushed off its attachments. Then there should be a separate dissection of the vesico-vaginal fascia. In this way, the danger of opening the bladder is minimized. The vagina should be opened posteriorly. The vaginal vault should be closed with interrupted sutures of No. 1 chromic catgut, the round ligaments sutured to the vaginal vault and the utero-sacral ligaments sutured to each round ligament. This provides vaginal support.

Conclusion: Four common gynecologic conditions are discussed that have been frequently observed and are often mishandled. Suggestions have been presented in regards to their management, and to avoid the morbidity and mortality encountered.

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Discussion

Dr. J. F. Lucas (Greenwood)—Dr. Stallworth has most ably brought to our attention several situations in which inadequate or careless diagnosis often results in the wrong treatment or inadequate treatment and failure to cure the patient.

Dr. J. W. Hoffman of Chicago studied serial sections and wax model reproductions of the adult female urethras obtained from eleven necropsies, giving us a new conception of the anatomy and histology of the paraurethral ducts and glands. He revealed how glaringly incorrect the teaching on this subject has been since the time of Skene. They are branched tubular glands instead of compound racemon as usually described. The least number of ducts found was six and the most 31. There was a marked variation in the extent of the paraurethral ducts in different individuals as well as the number. Contrary to common teaching this prostatic homologue in the female is most often a widespread branching of the ductal channels and glands that surround the urethra to some extent on all sides and is infected probably as often if not more often through the male prostate.

This ductal system is involved in specific and non-specific infections of the urethra resulting in obstruction of the ducts, paraurethral enduration and abscess formation which may rupture into the urethra and result in urethral diverticula. Stricture of the urethra due to scar formation is very common· These conditions are often overlooked unless kept in mind and symptoms produced attributed to other pelvic pathology.

The syndrome of chronic urethritis or granular urethritis so often seen in female patients and in my opinion should be included along with strictures that are commonly overlooked. In most of these cases the catheterized specimen will be clear. The urethra and bladder should be studied with the urethroscope or ponendoscope. The mucosa of the bladder neck and proximal one third of the urethra often reveal irregular red granulations and occasionally clear cysts and polyps. The trigone is commonly the site of chronic inflammation.

These patients often complain of referred pain which may lead to diagnostic errors unless the urethra and bladder are examined thoroughly.

In elective gynecological surgery all pathological benign conditions of the female genitalia should be corrected at the time of operation. If hysterectomy is indicated we often prefer the vaginal route and if plastic repair is needed we nearly always do the whole job from below. This not only saves time, is easier on the patient, but also gives better results and all pathology is corrected through one operative field.

Vaginal hysterectomy is contra-indicated only when the uterus is fixed as result of residue of pelvic infection, extensive endometriosis, previous suspension or the presence of tumor too large to pass through the pelvis.

The question of cervical stump with its high incidence of cervical malignancy and pathological changes incident to interference with its blood supply has convinced most gynecological surgeons that complete hysterectomy should be done in the majority of cases.

I wish to commend to you a comparatively simple technic which I have followed for the past 5 years. A description of this technic has been recently published by Dr. Albert H. Aldridge of Woman's Hospital, New York. In the April 1950 issue of the **American Journal of Obstetrics and Gynecology**. The important points in this technic are 1) release of the cervix from the vault of vagina by dissection within the peri-cervical fascial cuff and 2) the fixation of the detached proximal ends of the transverse cervical ligaments to the vaginal vault in a way which leaves it well supported and elastic.

This technic differs somewhat from that described by the essayist in that the round ligaments are not returned to the vaginal vault but used to support the ovaries near the lateral wall of the pelvis. This tends to protect the ovarian blood supply and prevents pelvic pain and dyspareunia from prolapse of the ovaries into the cul-de-sac.

I wish to commend the essayist on his insistance on biopsy or accurate diagnosis of the cause of bleeding before treatment is started. A recent case illustrates the lead results that occur when this precaution is not taken. This 42-year-old woman was sent to me by her family physician on account of flooding and pelvic pain. She gave a history of having had a supra-vaginal hyperectony at 34 for uterine bleeding but her biopsy or pathological report was obtained. She continued to spot a little each month and had a continuous leukorrhea and on two occasions was cauterized—again without biopsy.

She had a large hard endurated cervical stump with no ulceration on the vaginal portion of the cervix but was bleeding very freely from within the stump of the cervix. Biopsy of the endocervix revealed epidermoid carcinoma. There was considerable enduration in the broad ligaments and only palliative radiation was given.

This woman could have been cured had biopsy been done before the hysterectomy and would have had a much better chance if biopsy had been done before the cauterization.

Menstrual Irregularities*

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IRREGULARITY of menstruation is without a doubt one of the most common complaints of woman. I shall attempt, in this paper, to classify and briefly outline the treatment of the functional types of disorders. It is all important, however, to emphasize that no abnormal menstruation or uterine bleeding should be considered of functional origin unless a thorough search for an organic, local and/or systemic cause for the bleeding has been performed. This should consist of a complete medical history, physical examination, including a pelvic examination, examination of an endometrium biopsy and, not infrequently, a diagnostic curettage as well. Once this has been completed, and the irregularity persists, the problem should be approached from a pathological physiology viewpoint. We are today in a better position than our predecessors to tackle this problem with the present-day knowledge of ovarian function and some of the proved facts in the yet obscure field of pituitary-ovarian relationships.

As a basis for the classification and treatment schedules to follow, let us for a moment go back and review the physiology of normal menstruation. The pituitary gland is the master gland of reproduction. The regularity of the menstrual cycle is dependent upon the interaction between the pituitary gland and the ovaries. The ovary depends upon the pituitary gland for its sustenance and, in turn, controls the output of hypophyseal hormones, both qualitatively and quantitatively. At the onset of a menstrual code, the pituitary gland secretes the follicle-stimulating hormone, as well as small amounts of luteinizing hormone[1]. The F.S.H. exerts a stimulating effect upon the growth of the primordial ovarian follicles. With maturation of the follicles, estrogens are elaborated with consequent increase in L.H. secretions, so that ovulation finally occurs at about mid-cycle (14th day). The estrogens stimulate proliferation of the uterine endometrium. When ovulation occurs, the cavity of the follicle collapses and there may be a transitory drop in the estrogen blood concentration. Shortly after ovulation, within six to eight hours, progesterone and estrogen are secreted by the corpus luteum from the theca interna and the granulosa cells of the collapsed follicle. The progesterone, in turn, acts upon the pituitary gland to inhibit further L. H. secretions, thereby preventing additional follicles from ovulating. Under the influence of estrogen and progesterone, the proliferative endometrium (due to estrogen activity) acquires a secretory function and is highly thickened, in preparation for nidation of the ovum in the event of fertilization. With the death of the ovum, the corpus luteum undergoes degenerative changes with a sudden drop in estrogen and progesterone output. This is followed by menstruation and also causes the inhibiting influence on the pituitary of a high blood estrogen and progesterone level to be released permitting secretion of F.S.H. and L.H., with subsequent repetition of the cycle. It is also necessary, at this point, to define true menstruation[2] as the uterine bleeding that results from the shedding of a progestational or secretory endometrium, occurring every 24 to 32 days and lasting from 3 to 7 days with the amount of flow requiring the change of roughly four napkins a day.

It was in 1927 that Corner called attention to the fact that not all cyclical uterine bleeding may be irregularly interspersed between normal cycles in normally menstruating women.

OCCURRENCE

Functional disorders of menstruation occur most frequently in adolescence or early in the climacteric. The majority of such irregular uterine bleeding[4] occurs from a hyperplastic endometrium. This points to an increased or prolonged estrogen influence upon the endometrium and usually of a non-ovulatory nature with the absence of any progesterone activity. The treatment of irregular bleeding during these two stages of a woman's life, however, is not the same by virtue of the importance of conserving the menstrual and reproductive functions in the younger group of patients, and their unimportance in the menopausal age group.

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Management of Irregular Bleeding in the Adolescent Group

Since this condition is usually of an anovulatory nature, it is well to remember that in a large proportion of these young girls, it is quite certain, after a time, to correct itself, usually with the inauguration of ovulation. Any active treatment in the milder cases should be directed toward maintaining good health, out-door exercises, sunshine and a diet rich in proteins and vitamins. The young girls who have bled enough to alter their blood picture should receive more active treatment and a careful physical examination. Blood transfusions are the most expedient means of rapidly restoring blood loss. Curettage will usually arrest the bleeding and may be curative in tiding the patient over until ovulation is established. Moderate uterine bleeding may be effectively checked by the use of 10 mgms. stilbestrol daily for three days, then gradually diminishing the dosage, or testosterone propionate, 25 mgms., I.M., not to exceed 200 mgms. in any four-week period. The primary arrest of bleeding by such means should be considered but a stop-gap mechanism without any assurance against recurrence. It is wise to remember that the period of adolescence is one of hormonal instability and any indiscriminate use of organotherapy (endo-criminologic practice) on the part of the practitioner may be the cause for more serious and, I dare say, permanent impairment of the patient's menstrual and reproductive functions, not to mention the possible injury to the patient's emotional and personality status.

Management of Irregular Bleeding in the Premenopausal and Menopausal Group

In this group, three factors stand out foremost in the management of this condition:

1. The elimination of the possibility of cancer and other organic disease.
2. The unimportance of conserving menstrual and reproductive functions.
3. The imminent appearance of amenorrhea with the natural menopause, which may be very promptly forthcoming.

With these facts in mind, the treatment should consist of:

A. Prompt replacement of blood loss by transfusions if the bleeding has been excessive.

B. Curettage to rule out malignancy and organic disease. This may also be curative pending the establishment of menopausal amenorrhea.

C. Establishment of artificial menopause by deep roentgen therapy or radium. Surgery should be resorted to in the presence of contra-indication to radiation therapy or in cases where there is another indication for laparotomy. (400 roentgen units directed to each ovary will produce permanent cessation of function, or 1500 to 2000 mgm. hours of radium using 50 to 100 mgms. of radium[5]. Estrogens have no place in the treatment of menopausal bleeding.

Dysfunctional uterine bleeding during the child-bearing period presents a more difficult diagnostic and therapeutic problem. Difficulties in diagnosis result from the frequent occurrence of bleeding in complications of child bearing. Once these and other organic causes for abnormal bleeding are eliminated, then the diagnosis of functional bleeding is made. The origin of the trouble, according to Davis[5], is rarely in the ovaries, but more often in the anterior lobe of the hypophysis and occasionally in the thyroid gland. Since ovarian function is dependent upon the anterior pituitary secretions, the condition is primarily one of secondary ovarian dysfunction with abnormal estrogen-progesterone secretion. The endometrium has been rightfully designated as a mirror reflecting ovarian functions. The microscopic examination, therefore, of the lining of the uterus will provide a reliable clue to the nature of the ovarian dysfunction. This information is within the reach of every general practitioner; a sample of endometrium may be easily obtained in the office by means of the Novak or Randall curette and examined. A practical and reliable classification has been prepared by Bickers[6] as follows:

Ovulatory Cycles:
- A. Abnormal Interval
    1. Amenorrhea
    2. Oligormenorrhea
    3. Polymenorrhea
    4. Ovulation Bleeding
- B. Abnormal Amounts
    1. Hypomenorrhea
    2. Hypermenorrhea

Anovulatory Cycles:
- A. Normal Interval
- B. Abnormal Interval and Amounts
    1. Amenorrhea
    2. Oligomenorrhea
    3. Metropathia Hemorrhagica

All ovulatory bleeding occurs from a secretory endometrium; anovulatory bleeding from a hyperplastic endometrium.

Ovulatory Bleeding

1. **Amenorrhea**—In this group, there is a presumably normal pituitary-ovarian cycle with abnormal vascular response in the endometrium. Bickers[6] reports this phenomenon in a patient who became pregnant twice without ever menstruating. There is no satisfactory treatment for this condition.

2. **Oligomenorrhea**—Menstruation at long intervals, 25 to 40 days. This occurs in the presence of corpus luteum cysts. In this case, there may be failure of the corpus luteum to recede, resulting in the persistence of a secretory endometrium over a period exceeding the usual fourteen days following ovulation. Rock[2] maintains that there may be a retardation of follicular response to F.S.H. stimulation with an atrophic endometrium at first, but normal endometrial growth during the four weeks preceding the delayed bleeding. Treatment should be surgical if a persistent corpus luteum is the cause, otherwise, no specific treatment is required besides reassuring the patient that her fertility is unimpaired.

3. **Polymenorrhea**—The periodic occurrence of bleeding more often than every twenty-four days, which is due to a short-lived corpus luteum undergoing premature degeneration earlier than fourteen days following ovulation. This results in an early withdrawal of estrogen and progesterone. Treatment here requires the administration of estrogen and progesterone from the eighteenth to the twenty-sixth day, thereby carrying the estrogen-progesterone levels after the corpus luteum has failed, the dosage recommended being stilbestrol, 5 mgs. and progesterone 10 mgms. daily.

4. **Ovulation Bleeding**—This results in a periodic bi-monthly bleeding with an alternate scanty flow and normal period. The scanty flow originating from a proliferative endometrium and the normal period from a secretory endometrium. The ovulation bleeding is presumably due to an exaggerated decline in the estrogen blood level following the rupture and collapse of the mature follicle after ovulation. This is usually not serious enough to require specific treatment.

5. **Hypomenorrhea**—Scanty periodic bleeding from a secretory endometrium. This condition may be due to a poor vascular response to estrogen-progesterone withdrawal, myometrial spasm, usually associated with dysmenorrhea (Bickers), or hyperthyroid activity. Treatment consists of a hot bath at the onset of the period, spasmolitic drugs or iodine therapy, as indicated, as well as reassurance of the patient's unimpaired fertility.

6. **Hypermenorrhea**—Prolonged and excessive periodic bleeding. This is frequently associated with interference in normal myometrial contraction and hypothyroidism. The former is usually due to an organic disease affecting myometrial function and the treatment should be directed against the pathology. Guillermo, et al[7], showed that small amounts of thyroid hormone stimulated the ovaries, while an excess depressed the ovaries; explaining the more frequent occurrence of hypomenorrhea in hyperthyroidism. Hypermenorrhea associated with a low BMR responds dramatically to thyroid therapy, to tolerance. Blood dyscrasias not infrequently may be the sole etiology and should be eliminated. Where bleeding is excessive, treatment should be instituted to restore lost blood and arrest the bleeding; curettage and the use of testosterone may prove life-saving in an emergency, but is by no means an assurance against recurrence.

Anovulatory Bleeding

1. **Cyclical Bleeding**—There may be periodic flow of blood from a hyperplastic endometrium at normal intervals and with normal blood loss. This patient may be entirely normal and require no treatment at all. Should such a patient, however, present sterility as her chief complaint, then specific treatment may be required, if the patient shows no tendency to ovulate over a period longer than six months. If no specific cause can be found after a thorough search, including skull x-ray, BMR and repeated endometrial biopsy examinations, then it will be necessary to resort to cyclic estrogen and progesterone treatment.

2. **Amenorrhea**—This may be primary or secondary. If the amenorrhea sets in after normal menstrual function had occurred, then it is secondary, and in the absence of organic disease, the cause of the disorder is frequently a disturbed pituitary-ovarian relationship. Treatment in such cases consists of the cyclic administration of estrogen and progesterone over a period of three to four months.

3. **Oligomenorrhea**—This may be primary or secondary. In the absence of organic disease, the condition indicates a similar, but less se-

vere, pituitary-ovarian dysfunction than in the previous type. Here again, estrogen and progesterone administered cyclically over a period of three to four months has given satisfactory results.

4. **Metropathia Hemorrhagica**—Intermittent, acyclic uterine bleeding that may vary from scanty to excessive blood loss. Besides treating the patient's anemia and improving her general health, cyclical estrogen and progesterone treatment is recommended and has given good results.

Cyclical Estrogen and Progesterone Therapy

The rationale of such treatment is that it represents an attempt on our part to reproduce a normal cyclically changing pituitary-ovarian-endometrial pattern. It provides the physiological stimulus to the gonadotropic secreting function of the pituitary gland that normal menstruation provides, just before menstruation occurs, at the time of corpus luteum atrophy, which is the sudden withdrawal of estrogen and progesterone. This treatment also provides for the cyclical endometrial hypertrophy and secretory growth with ultimate shedding of the built-up endometrium that occurs in normal menstruation. Such a treatment, however, is substitutional and consequently inhibits the ovaries instead of stimulates them, thus prohibiting the occurrence of ovulation while the patient is under therapy. With these facts in mind, the course of treatment will naturally consist in the administration of estrogenic substances during the first half, or follicular phase, of the cycle and the administration of both estrogen and progesterone during the second half, or luteal phase, of the cycle. Estrogenic substances can most conveniently and effectively be administered by mouth. This will also spare the psychologic conditioning accompanying the belief that good health is dependent upon hypodermics. The more commonly employed oral preparations of estrogen are Stilbestrol, Ethinyl Estradiol and Premarin. Premarin[8] is better tolerated than the synthetic forms of estrogen; a 1.25 mgm. tablet of Premarin being equivalent in potency to a 1 mgm. tablet of Stilbestrol. Progesterone is most effectively administered parenterally but may be administered orally in larger doses[9].

Treatment Schedule

Give the patient 0.3 mg. of Ethinyl Estradiol (or its equivalent in another form) daily for twenty days, starting on the fifth day of the cycle, or any day in a woman with amenorrhea or excessive bleeding; in cases where curettage was performed, immediately after the curettement. Then give the patient 5 mg. of progesterone, IM, daily, for the last five days of the twenty-day Ethinyl Estradiol treatment period. The patient may be expected to bleed from estrogen-progesterone withdrawal within one to nine days after the treatment is discontinued. If bleeding starts within nine days of the estrogen-progesterone withdrawal, a second course of treatment, similar to the first, is recommended on the fifth day of the woman's cycle (considering the first day of bleeding as the first day of the patient's cycle). Should withdrawal bleeding not occur, then recommence the estrogen-progesterone treatment on the tenth day after completion of the first course. This twenty-day treatment schedule should be repeated three to four times. Seventy per cent of women so treated[10] have been salvaged and were able to maintain a normal cyclical pituitary-ovarian relationship with normal menstruation, so to speak, on their own steam.

The result of treatment by the cyclical use of equine and chorionic gonadotrophins[11] has not been as gratifying as that reported with the use of estrogen and progesterone. Allergic reactions and the development of ovarian cysts have been associated with the use of the equine gonadotrophin[12].

Summary

The normal physiology of menstruation has been reviewed as a basis for the diagnosis, classification and treatment of menstrual disorders. Menstrual disorders in the adolescent, pre-menopausal, and menopausal group of patients was discussed with an outline of the modern concept of their management. A classification of the dysfunctional uterine bleeding during the child-bearing period was presented with hints on treatment and with special emphasis on the principle and applicability of treatment with cyclical estrogen and progesterone.

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Practical Considerations of Liver Function Tests*

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THE pandemic of hepatitis which involved millions of persons in World War II is clearly responsible for the present wave of interest in the development of tests for the diagnosis of hepatic disease and for the testing of hepatic function. The plethora of publications on the subject has been in one sense useful and stimulating. Unless, however, the avid reader stops at intervals to take stock of the situation, he is likely to find himself confused by the flood of information which is available to him. The less widely read physician, on the other hand, is likely to find himself misled by descriptions of tests which seem efficient but which actually have not been employed in sufficient numbers of cases, or in sufficient varieties of conditions, to warrant the claims which are made for them. Finally not the least of the difficulties of the reader who is seeking the truth is the fact that even the most dispassionate of writers are usually special pleaders. They present, with a commendable degree of detachment, the advantages and disadvantages of a variety of tests of liver function—but almost invariably they end by declaring, often without sound evidence, the special advantages of the tests which they themselves advocate.

The objective of this communication is to present in brief outline the principles of the most important tests of liver function now in use, together with the advantages and disadvantages of each method. The writer has, of course, his own preference, but special pleading will be no part of the discussion.

Flocculation Tests

Cephalin-Cholesterol Flocculation Test—The cephalin-cholesterol flocculation test, described by Hanger[1] in 1938, has been modified in several ways and is more reliable now than when it was first used. It is based on the role of the liver in protein metabolism, with particular reference to the deaminization of amino acids and the formation of urea, fibrinogen and possibly other proteins. When physiologic salt solution and emulsion of cephalin-cholesterol are added to the serum of patients with normally functioning livers, flocculation is absent or is minimal at the end of 48 hours, while in patients with hepatocellular damage flocculation of some degree is present, on a scale of 0 to 4 plus at this time. In jaundice of diffuse parenchymatous origin the reading at the end of 48 hours is usually 3 to 4 plus. In jaundice caused by extrahepatic biliary tract obstruction it is usually 0 to 1 plus except when cholangitis is present. Then values up to 2 plus are not unusual.

This test is generally regarded as almost as sensitive as the dye test and it can be used in jaundiced subjects, in whom the dye test must not be employed and in whom, in the absence of infection, it is of differential diagnostic value. An additional advantage is that it requires only a single venipuncture. On the other hand, the time required to secure readings, 48 hours, is often inconveniently long, and the necessity for the daily preparation of fresh emulsions makes the test quite expensive.

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Weakly positive results are as equivocal as such results usually are. It is significant that several observers, notably Wade and Richman,[2] have found the test positive in patients in whom hepatic dysfunction was not previously suspected.

Thymol Turbidity Test—The thymol turbidity test, described by Maclagan[3] in 1944, can be read in 30 minutes, when the turbidity of the serum is at its maximum. Unfortunately, some confusion has been introduced into its use by disregard of the author's original standards, which set 4.0 units as the maximum on a scale ranging from 0 to 4; others have set 2.0 and 3.0 as the upper limit.

Watson and Rappaport,[4] who compared the thymol turbidity test with the cephalin-cholesterol flocculation test in 145 cases, found an agreement of 89.3 per cent and reported the majority of the discrepancies to be borderline. In their opinion, which is shared by many others, this test is a safe substitute for the cephalin-cholesterol flocculation test. Moreover, as already mentioned, it takes only 30 minutes, against 48 hours for the latter test, and it is carried out with an easily prepared, stable solution instead of with an emulsion which must be made fresh daily.

Not all agree with this point of view. Mann and his co-workers[5] at the Mayo Clinic are not at all impressed with this test. Their observations in 122 patients with "unequivocal clinical and laboratory evidence of hepatic disease" led them to reject the commonly held opinion that the thymol turbidity test is a delicate index of hepatic function and is capable of differentiating between hepatocellular and obstructive jaundice. They agree, in fact, with Hobbauer that it furnishes evidence of irritation to the hepatic cells rather than of hepatic damage.

In spite of these strictures, the thymol turbidity test is frequently helpful if one realized its limitations. It is almost universally positive in infectious hepatitis and almost universally negative in biliary tract obstructions. It is not useful in cirrhosis in which it is likely to be negative, even when the process is advanced. It is most important to remember that a negative test does not rule out severe hepatic damage of various origins. This is not a specific test, since it may give high values in a variety of diseases not related to the liver. Like the thymol flocculation test, to be mentioned shortly, it tends to remain positive longer during the convalescent phase of infectious hepatitis than any other liver function test.

Thymol Flocculation Test—The thymol flocculation test differs from the thymol turbidity test only in that a second reading is taken at 18 hours or later. In jaundiced patients there is little difference between the 30-minute and the 18-hour reading, but in nonjaundiced patients with hepatic damage the value is higher, on a scale reading from 0 to 4, with any value above 1 regarded as abnormal.

Kunkel,[6] who studied the thymol turbidity test serially in 76 patients with infectious hepatitis, found it 100 per cent accurate. The maximal values were uniformly higher in this group than in the control group of (46) patients, though the intensity of the reaction was not an index to the severity of the disease. The test was of little value in patients with cirrhosis of the liver. According to Kunkel, the thymol turbidity test has some specificity, in that elevated values appear to be present in conditions in which the liver is the site of an inflammatory process. The test, however, is not an estimate of the degree of aberration of liver function and this observer objects to its being called a liver function test.

Studies of the Serum Bilirubin

Icterus Index—The icterus index, while not an accurate method of determining the level of jaundice, is simple and sufficiently informative to make it worth while to run it, when elaborate laboratory facilities are lacking, every 3-4 days in jaundiced subjects. It is not useful in the nonjaundiced patient.

Van den Bergh Test—The van den Bergh test is a precise qualitative and quantitative method of determining the serum bilirubin. The direct reaction, generally speaking, occurs in obstructive jaundice and the delayed reaction in catarrhal and toxic jaundice, though in the latter conditions, if the process is extensive, the reaction may become biphasic and later immediate. The normal level of bilirubin in the serum is 0.3 mg. per cent. Latent jaundice is present when the values range from this level to 1.9 per cent and clinical jaundice is present when they are 2.0 mg. per cent or more.

The interpretation of the direct reaction is that whole bile has passed through the epithelial cells of the liver and has been regurgitated into the blood stream through the canaliculi. The interpretation of the indirect reaction is that bilirubin which has not passed through the hepatic epithelial cells and which is not mixed with cholesterin is absorbed by the protein of the serum, so that alcohol must be added, in addition to the Ehrlich diazo reagent, for the occurrence of the color change which indicates a positive test. A positive indirect reaction indicates either reduced hepatic cellular activity, making it impossible for the normal amount of bilirubin to be excreted, or the formation of so much bilirubin that it cannot be excreted even by a normally functioning liver (hemolytic jaundice).

In the opinion of many observers results which are at least as conclusive can be obtained with tests which are simpler to perform and are less open to errors of interpretation.

Tests of Urinary Bilirubin and Urobilinogen

Tests of urinary bilirubin, for some reason yet to be explained, are of particular value in infectious hepatitis, since bilirubinuria occurs before jaundice is clinically evident or before significant increases in serum bilirubin can be demonstrated. Normal urine contains only a trace of bilirubin. In spite of its undoubted value, this test has not been widely employed clinically because of the complicated technique formerly required. During the war it was found that the addition of methylene blue chloride in aqueous solution to a specimen of prebreakfast urine was a satisfactory method of testing for urinary bilirubin. According to Gelles and Stokes,[7] this simple method solved the problem of testing large numbers of patients in areas in which infectious hepatitis was epidemic, and was also useful in detecting early clinical relapse. Objection to this test has been made in that it is nonspecific.

Since urobilinogen appears in any disease in which there is increased destruction of red blood cells, such as hemolytic jaundice, pernicious anemia and malaria, the quantitative test for it is not specific for hepatic disease. If this fact is borne in mind, the test is useful. A decrease in the normal amount of urobilinogen (the amount of which, incidentally, depends upon the time of day at which the test is carried out) or its complete disappearance, is characteristic of obstructive jaundice not associated with infection. If it disappears entirely, malignancy of the biliary tract or pancreas is a possibility, though this phenomenon is not observed until the disease process is advanced. When the test is used, it is necessary to establish the competence of renal function, since if the kidneys are impaired, and are unable to excrete urobilinogen, naturally it will not appear in the urine.

Other Tests for the Differential Diagnosis of Jaundice

The determination of the cholesterol (cholesterol esters) of the blood is sometimes useful as a differential test in jaundice subjects. The total cholesterol values, which normally range from 140 to 250 mg. per cent, are generally elevated in obstructive jaundice, in rough correlation with the degree of hyperbilirubinemia, and are generally normal or subnormal in disease of the hepatic parenchyma. Confusion may arise, however, in long-standing obstructive jaundice, particularly with associated cholangiitis, in which the value may be low because of a superimposed hepatitis.

The cholesterol esters normally make up 60 to 75 per cent of the total cholesterol value. If they fall to 50 per cent or less, most authorities believe that severe impairment of liver function has occurred, although all do not accept the same standards.

The alkaline phosphatase test is of no value in differentiating obstructive from hepatocellular jaundice, though an increase in the values in patients without jaundice may indicate hepatic disease. The normal value ranges from 1.5 to 4.0 Bodansky units, but values below 7.0 units are not ordinarily regarded as significant. In jaundice caused by non-obstructive hepatocellular disease the values ordinarily approach 10 units, but they may be higher, and they are usually higher in uncomplicated obstructive jaundice.

Dye Test

The dye test of liver function, which was described by Rosenthal and White[8] and popularized by Graham,[9] requires the injection of a specific amount of some dye, usually bromsulfalein, into the blood stream and the measurement of the degree of retention at one or more intervals thereafter. The Macdonald variation, which greatly adds to the sensitivity of the test, requires the withdrawal of blood at 2-minute intervals over a 30-minute period, through a special needle with a three-way valve, which remains in the vein throughout the examination and thus eliminates the necessity for multiple punctures.

According to Mateer and his associates,[11] the dye test indicates liver damage in association with gallbladder disease almost twice as often as any other single liver function test. Often it is diagnostic of obstruction before jaundice is clinically evident. Its chief drawback is that its usefulness is limited to non-jaundiced patients. It should not be employed if the serum bilirubin values are more than 5-6 mg. per cent.

Plasma Prothrombin Test

The plasma prothrombin test was not devised by Quick[12] as a liver function test but as a method of identifying patients likely to show a bleeding tendency. Its use as a liver function test is on the premise that prothrombin is formed in the liver and that a prolonged prothrombin time, while it may indicate a lack of vitamin K in the diet, or failure of absorption of vitamin K, may also indicate a functional incapacity of the liver to utilize this vitamin. If the fault does not lie in the liver, the administration of vitamin K will bring the prothrombin time to within normal limits. If the liver is at fault, its administration will have no effect.

As it is usually performed, the plasma prothrombin test is neither a diagnostic, nor a sensitive, test of liver function. It can, however, be made into a more useful test if the modification of Shapiro and Richards[13] is employed; this involves imposing on the liver an additional load by the parenteral administration of large doses of vitamin K. The test, which was employed by these observers 113 times in 110 patients, revealed excellent correlation with clinical observations and indicated that when the modification described was used, the usual objections to the prothrombin time as a test of liver function could not be advanced fairly.

Hippuric Acid Test

The oral and intravenous tests of liver function devised by Quick[14, 15] and predicated upon the ability of the liver to detoxify sodium benzoate have lost much of their popularity since newer tests have been devised. They are no longer used at the Mayo Clinic,[16] for instance, and some objection has been raised to them on the ground that they are time-consuming. The oral test, it is true, is less sensitive than the intravenous test, and since it causes occasional nausea and vomiting, it cannot be used in patients who present these gastrointestinal symptoms. It is not useful, for that matter, unless gastric function is normal, and both the oral and the intravenous test require intact renal function for full acceptance of the results. On the other hand, the Quick test has numerous advantages. The intravenous test requires only one venipuncture, it is completed within an hour, it is inexpensive, and it is relatively simple to perform. It therefore lends itself particularly well to serial determinations.

The hippuric acid test is not of differential value in jaundice. Quick's original idea, that lower values were likely to occur in the non-obstructive types of jaundice and normal values in obstructive jaundice, has not been substantiated. Those who have used the test extensively report quite as low values in obstructive jaundice of long duration as in non-obstructive jaundice.[17]

Snapper and Saltzman have devised a simple colorimetric test of urine following the ingestion of benzoic acid, the principle of which is the excessive excretion of benzoyl glucuronate in hepatocellular damage. In their opinion this test answers some of the objections to the hippuric acid test. Their statistics suggest that it is not of value in jaundice of the obstructive type.

Test of Carbohydrate Function

Neither the galactose tolerance nor the levulose tolerance test has been widely accepted. The premise of the glucose tolerance test is that conversion of glucose to glycogen and storage of glycogen are functions of the liver and that in the individual with hepatic dysfunction the rate of utilization of a pre-determined amount of carbohydrate will be less than in normal subjects, so that a greater amount of the ingested substance will persist in the blood stream and will be excreted in the urine. The length of time required for the test, and the fact that it requires three or more venipunctures, make it undesirable for general use. Moreover, as Judd[19] pointed out in 1929, the methods for detecting hepatic injury in relation to dextrose metabolism are so unreliable as to suggest that they are related only to the reserve capacity of the organ; since the maintenance of a normal amount of sugar in the blood is one of the most important functions of the liver, it might be expected that this function would be one of the last to be altered by disease.

An occasional observer would not agree with these opinions. Althausen,[20] for instance, who has had a wide experience with tests of liver function, considers the galactose tolerance test simple to perform and extremely useful in the differential diagnosis of jaundice.

Serum Protein Determinations

Determinations of the total serum protein and of its component fractions must be used with caution in the diagnosis of hepatic disease. The normal values, 6.5 to 8 gm. per cent, are seriously impaired in long-standing, but not in early, disease. The normal albumin-globulin ratios (4.0-5.0:1.5-4.0 gm. per cent) are likely to be reversed under such circumstances because of the reduction in the albumin fraction. Teitelbaum and his group,[21] for instance, found that 84.2 per cent of 57 patients with liver disease had a serum albumin level below 4.0 gm. per cent. Since the liver is probably the site of the synthesis of serum protein, the test is logical, but if it is used to evaluate liver function, nutritional and renal causes for the alterations must be investigated and excluded.

Kilbrick and Clements,[22] in a comparative study of the value of the serum albumin-globulin ratio, the cephalin-globulin flocculation test and the thymol turbidity test, found determination of the albumin-globulin ratio most in accord with the general clinical picture. They used the methyl alcohol method of precipitation devised by Pillemer and Hutchinson, which they found to compare favorably with the values determined by the electrophoretic method, though they were slightly lower than the values determined by fractionation with salt. In a series of 148 cases of various types of liver disease Salveson and Lodoen[23] also found variations of the serum proteins of great value, especially from the diagnostic standpoint.

The increasing emphasis on the value of serum protein determinations makes the simple turbidimetric test devised by Kunkel[24] of special value. The reactions observed in the cephalin-cholesterol flocculation test and the thymol turbidity test, he points out, have been shown to depend chiefly on small changes in the globulin fraction of the serum, though the exact aberration has yet to be identified. It is therefore important to determine specifically and directly slight elevations of the globulin which occur in acute liver disease. The usual methods depend on nitrogen determinations following salting-out procedures, and, in addition to being time-consuming, are not particularly sensitive and are subject to considerable error. Electrophoretic methods are reliable but are not routinely practical. Kunkel's test seems to answer these objections: It requires merely the dilution of serum with a solution containing a small amount of copper or of zinc sulfate and estimation of the resulting precipitate, the optical density of the suspension being proportional to the concentration of gamma globulin. This method, according to Kunkel, really measures the total globulin elevation in pathologic serum, because hyperglobulinemia is almost always the result of an alteration in the gamma globulin fraction of the serum. The turbidity is translated into units by applying a standard curve, similar to the one used for the thymol turbidity test. The normal range, it was concluded on the basis of about a thousand determinations, is between 2 and 8 units.

When the test was performed with zinc sulfate, normal serum did not flocculate for at least 12 hours, while that from patients with very slight elevation of the gamma globulin fraction usually flocculated within 4 hours. The test was positive in every patient with cirrhosis of the liver and was of particular value in following the progress of infectious hepatitis and in tracing subsequent hepatic damage. It was most useful when used serially, which is true of most other liver function tests.

Tests of Bile Salt Concentration

Studies of bile salts concentration in hepatic bile furnish so useful and accurate a method of determining liver function that it is unfortunate that they can be employed only in cases in which a biliary fistula exists or surgical drainage with a T-tube has been instituted. The length of the interval between the release of biliary obstruction and the reappearance of previously absent bile salts in the bile is also a good index of the return of normal liver activity.

Gray and his associates,[25] in a study of 50 patients submitted to common bile duct drainage, found low concentrations of bile salts in every case in which preoperative hepatic function test and inspection of the liver at operation had indicated abnormal function or hepatic damage. In some cases the concentration had not reached normal (200-1,800 mg. per 100 cc. of bile) at the end of a month, and fatalities occurred in 2 patients whose concentrations were less than 200 mg. per cent. The studies of Greene and his associates[26] produced similar results. In a series of 47 cases they found that when there was minimal evidence, or no evidence, of hepatic damage, the reduction in the bile salts concentration was moderate and that after 2-3 days there was a progressive return to normal levels. Continued failure of the liver to secrete bile salts was, however, a matter of serious prognostic import.

Miscellaneous Tests

The colloidal gold test of Gray is based on alterations in the protein metabolism and, according to Mateer,[11] is quite sensitive. It is not, however, a practical test for routine use since it is time-consuming, difficult to perform, and likely to give false-positive results. The same is true of the Takata-Ara test, which, Kirk[27] concluded, after an analysis of 3,583 cases collected from the literature, is likely to be positive in any condition, hepatic or nonhepatic, in which the globulin level is elevated.

Determinations of the blood urea and blood uric acid are of little value until hepatic damage is so far advanced that it is evident clinically. In other words as Boyce[17] has expressed it, these tests are useless when they are most needed and purely academic when they have become reliable.

Discussion

It is no simple matter to carry out sufficient numbers of different tests on a sufficient number of patients to permit adequate comparisons of the various liver function tests in general use. In the largest of these studies, on 307 patients, 112 of whom had definite clinical evidence of hepatic disease, Mateer and his associates[11] found that the intravenous hippuric acid test, the colloidal gold test and the cephalin-cholesterol flocculation test were positive, respectively, in 75 per cent of the 86 cases, in 58 per cent of 55 cases, and in 51 per cent of 39 cases. These tests were slightly more sensitive than the serial bromsulfalein test and much more sensitive than the oral hippuric acid test. In a comparison of eight liver function tests carried out in 50 clinical or pathologically proved cases of cirrhosis, neoplasm and hepatitis, Teitelbaum and his associates,[21] found the respective efficiency of the tests to be 86.2 per cent for the intravenous bromsulfalein test, 84.2 per cent for the serum protein test, 55.2 per cent for the urinary urobilinogen test, 51.7 per cent for the van den Bergh test, 51.8 per cent for the Takata Ara test, and 20.4 per cent for the galactose tolerance test. The reports of Wade and Richman,[2] of Cecil[28] and Townsend[29] generally confirm these results. Wade and Richman found that in the absence of jaundice the bromsulfalein test gave more consistent evidence of the state of the liver than the cephalin-cholesterol flocculation test, the intravenous hippuric acid test, or the diastase test. This author's objection to the hippuric acid test, on the ground of the accurate quantitative equipment required for it, is rather surprising; it would seem that few laboratories would not possess it. His further objection that it is time-consuming is also not the general opinion of those who have used it widely.

The multiplicity of its functions, its enormous reserve powers, and its remarkable powers of regeneration make for difficulties in the study of the function of the liver. Furthermore, as Klatskin[30] has put it, the intimate anatomic relationships of the glandular, excretory and vascular components of the liver make for complex functional disturbances even when the abnormality present in a given case is confined to a single component. The physician who employs liver function tests must therefore tread warily. He must select the tests which seem most appropriate for the necessities of the patient he is studying. He must carry them out accurately. He must interpret them with due regard to the patient's nutritional status and renal function, and, if they are oral tests, with due regard to his gastrointestinal status. He cannot disregard dietary elements, or even the time of day. He must accept the results of a single test with caution; liver function tests are always most satisfactory when they are carried out serially. Finally, the greatest reserve must be used in accepting the results of any single test or any group of tests in the decision for or against surgical therapy. Meyer, Popper and Steigman,[31] for instance, in a carefully controlled comparative study of various liver function tests in jaundiced subjects, pointed out that if laboratory evidence had been relied upon and clinical evidence disregarded, well over half of their patients with surgical jaundice would have been denied surgical treatment.

Summary

The liver function tests in common use at the present time have been briefly presented, with special emphasis upon their principles and their apparent advantages and disadvantages. The endeavor has been made to make this a strictly objective presentation, and the author has therefore entered the discussion only to point out the precautions with which all such tests must be used and interpreted and to emphasize that unless clinical data are placed above the results of liver function tests, a great

disservice may be done to the patient who requires surgery.

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The Management of Metastatic Malignancy*

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With current improvements in diagnosis and with lengthening of the life span it appears that metastatic malignancies will be encountered more frequently. From the standpoint of treatment such patients are considered to have inoperable lesions or already to have received the full benefits from surgical treatment of the primary site.

Management of such patients requires all the ingenuity that can be mustered. The usual aim is to keep the patient comfortable, and if possible, useful to the family and community. Therapeusis must be planned on a long range basis, and it may be wise to use certain aids at selected periods rather than be too energetic at the onset, and suffer some frustration later. Although the outcome may be hopeless, the patient looks to day to day management for comfort.

Time and experience have demonstrated that metastatic malignancy need not always imply a fatal or incurable disease. It is now known that several metastatic malignant lesions are amenable to surgical or roentgen-ray treatment. The crux of such conditions lies in the possibility of removing or destroying a solitary distal lesion. It has been found, for example, that when a solitary metastatic malignancy can be demonstrated in the lungs, lobectomy is a good palliative procedure that will lessen later distress and complications. A solitary metastatic lesion in the left lobe of the liver, when due to a gastrointestinal malignancy, should also be resected. Additional surgical measures on patients with metastatic malignancy may help to alleviate the pain. Subdiaphragmatic vagotomy may relieve pain from extensive carcinoma of the stomach, and bilateral splanchnicectomy will sometimes relieve the distress of cancer of the pancreas. Such possibilities, though infrequent, should make the attending physician alert to additional methods of help for this unfortunate group of patients.

Within the past decade many innovations in therapy of metastatic malignancies have been introduced, and although many final conclusions are yet to be drawn, the use of such measures at the present time seems justified. There are a number of therapeutic measures other than surgical for such cases. Most of the current interest centers around agents that are primarily "antimalignant," namely, cytotoxic agents, metabolic antagonists, radioactive materials (radiation), roentgentherapy and hormones.

Cytotoxic Agents

Since its introduction into the medical field in 1942, **nitrogen mustard** (methyl-bis) (B-chlorethyl) amine hydrochloride) has received extensive attention in the treatment of malignancies. So far the other nitrogen mustard derivatives have proved of no greater value than HN_2. The action of nitrogen mustard in many ways resembles total body irradiation and damage will occur to the normal intact system. Its benefits lie in its damage and interference with reproduction of susceptible cells. Its action is rapid but unfortunately of relatively short duration.

HN_2 is administered either by direct intravenous injection or preferably into the tubing near the needle of a rapidly running intravenous infusion. This drug should be freshly prepared in physiologic saline, and the usual dosage is 0.1 mg./kg. of body weight daily for four days. Treatment should be closely supervised, especially if there is evidence of depression of bone marrow. If this should occur, subsequent courses of nitrogen mustard should await restoration of the hematologic picture. Every attempt should be made to prevent extravasation of the nitrogen mustard into perivascular spaces, which usually causes an extremely painful and damaging reaction.

In order to prevent nausea and vomiting, which often follow administration of nitrogen mustard, it has been found desirable to give the infusion at bed time, one hour after the administration of a fairly large dose of a sedative (3-6 grains of sodium amytal). This also causes less interference with the patient's feeding schedule. Therapeutic doses are not without danger and may cause severe leukopenia, bleeding, febrile reaction, toxicity and eventual death.

Nitrogen mustard has proved to be of palliative value in far advanced symptomatic pulmonary malignancy. Subjective improvement occurs in about 6 out of 10 cases. The patient experiences a sense of well being, and has considerably less discomfort, cough and dyspnea. The appetite often increases with consequent gain in weight. In such cases it is encouraging to be able to demonstrate a decrease in the pleural effusion, and reduction in the roentgenographic outline of the pulmonary lesions and metastasis. Karnofsky and associates[1] note improvement in 8 of 11 patients with symptoms of obstruction of the superior vena cava. Remissions last five to six weeks and although repeated courses of nitrogen mustard may not be as successful as the initial course, they may aid in keeping a patient with pulmonary malignancy comfortable and prolong his life a few months.

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Nitrogen mustard has been accepted as another tool in the treatment of Hodgkin's disease; it should be regarded as an adjunct to roentgen-ray therapy in such cases. Besides bronchogenic carcinoma and Hodgkin's disease, favorable responses are sometimes obtained in other conditions. Nitrogen mustard is occasionally helpful in combatting symptoms in children suffering from neuroblastoma, Wilm's tumor, lymphosarcoma and osteogenic sarcoma. Gellhorn and Jones'[2] review of the literature showed that rhabdomyosarcomas responded favorably to nitrogen mustard. Equivocal responses were noted in lymphoepithelioma and Boeck's sarcoid. Such observations justify the use of nitrogen mustard in selected cases.

Urethane, also considered a cytotoxic agent, is of value in the treatment of multiple myeloma, and chronic myelogenous and lymphatic leukemia. One report (3) suggests that it is effective in metastatic prostatic carcinoma.

Metabolic Antagonists

Modified folic acid or antifolic derivatives: When it was appreciated that living cells would accept these harmful substances in lieu of folic acid, which is essential for the growth of normal cells, the antifolic acid derivatives took on new importance. To date partial success has been attained with folic acid antagonists (a metapherine, aminopterine and amino-an-fol) in the treatment of acute leukemias. There has been little, if any, favorable response, however, with these materials in other malignancies.

Radioactive Isotopes

During the last few years much attention has been given the use of **radioactive iodine** in the treatment of carcinoma of the thyroid, and although surgical excision remains the treatment of choice, radioactive iodine is now considered of value in selected cases of inoperable carcinoma of the thyroid.

About 14 radioactive isotopes of iodine have been prepared. Most observations, however, have been made with I^{131}, which is obtained from the atomic pile at Oak Ridge, Tenn. I^{131} like stable iodine, is administered orally and collected from the blood stream by normal and some cancerous thyroid tissues. The thyroid tissue that collects this I^{131} is irradiated internally, and tissue is destroyed by beta and gamma rays.

Unfortunately iodine and I^{131} are concentrated in effective quantities in only about 15 per cent of cases of carcinoma of the thyroid.[1] In general only the cancers which form follicles containing colloid collect the radioactive iodine. The follicular adenocarcinomas and the benign metastasizing stroma will collect I^{131} whereas most papillary adenocarcinomas do not collect the isotope. It has been noted that metastatic lesions may collect radioactive iodine whereas the primary lesion does not. Of interest also is the evidence that metastatic thyroid nodules may collect I^{131} after the normal thyroid has been removed. This suggests that the metastatic thyroid lesion begins to form the thyroid hormone. This inactivation of normal thyroid tissue may be achieved by thyroidectomy, destruction of the gland by radioactive iodine, administration of effective doses of antithyroid drugs, such as propylthiouracil, or administration of a few doses of thyrotropic hormone. It is estimated that over half of all thyroid carcinomas fail to collect effective therapeutic doses of I^{131} even after stimulation of the tumor. Despite this drawback and the fact that to date proper use of radioactive iodine requires the skill of well trained physicians, its use promises new hope in selected cases. When radioactive iodine is effective, the tumor becomes smaller, and there is less bony metastasis, pain and obstruction of airways and food passages. Arrested growth has been demonstrated in some patients followed for as long as six years.

The dosage of radioactive iodine is variable and should be as large as the patient can safely tolerate. This usually ranges from 100 to 250 millicuries. The full effects of a dose cannot be determined for one to three months after its administration. Its use apparently does not interfere with roentgen-ray therapy that must be given at a later date.

Radioactive phosphorus (P^{32}), also of current interest, acts by irradiating the tissues, through the production of beta rays. It is effective in hematologic diseases. It has been used with some success in polycythemia vera and chronic lymphatic leukemia. Its efficacy in other malignancies, however, seems doubtful. **Radioactive colloidal gold** is a similar agent whose therapeutic application has not yet been defined.

Roentgentherapy

Because of recent interest in radioactive isotopes, hormones and newer cytotoxic agents, the palliative value of **roentgentherapy** has been slightly eclipsed. However, this method of therapy still remains satisfactory for alleviation of certain symptoms due to metastatic malignant lesions. Pain and obstruction of the major vessels often respond well to its use. If the lesions are multiple, the palliative therapy should be limited to one-half the tolerance dose, for in this way later roentgentherapy may be utilized. If only a single lesion is demonstrable, and there is reason to believe that the metastasis is limited to this site, it may be feasible to administer the full roentgen-ray dosage to that area, in hopes of eliminating the metastasis. Solitary bony metastasis can best be treated by full doses of roentgen-ray.

If a patient manifests symptoms such as pain and there is reason to suspect metastasis in the area, roentgentherapy in one-half the total dose could be utilized. This is justifiable when it is realized that symptoms of skeletal metastasis precede roentgenographic evidence by several months.

The pre-auricular lymph nodes seem to respond particularly well to roentgentherapy. These nodes may become involved with metastasis from an adjoining skin cancer which has already been adequately exercised locally. If so, roentgentherapy is the treatment of choice, for the node responds well and the danger of damage to facial nerves is avoided. Skin metastases which show no evidence of lymphatic spread also respond well to roentgentherapy. Fortunately obstruction to the great vessels can be relieved by irradiation, since satisfactory response to irradiation occurs in nodes in the aortic lymphatic chain.

If therapeutic castration is desired, it may be accomplished by roentgentherapy of the ovaries. It has been our experience that this requires 1000 r to each ovary applied at opposing ports. In such cases, however, surgical castration may be preferable.

Whether or not postoperative irradiation for metastatic carcinoma of the breast prolongs the patient's life remains to be answered. It undoubtedly is beneficial, though, for relief of pain and obstruction. Its effect is variable and the duration of response unpredictable, but the temporary relief it sometimes affords makes it a valuable therapeutic tool.

Hormones

Androgenic and estrogenic therapy for malignancies has been under close scrutiny for at least a decade, and although certain facts have become established, our knowledge is far from complete. For the most part these agents alter the host's reaction in such a manner that continued growth of the malignancy is hindered or suppressed. Stilbestrol, for example, by diminishing the supply of gonadotrophic hormone to the testes, abolishes the androgenic secretions which are essential for rapid growth of the carcinoma.[5]

The use of estrogenic therapy for inoperable prostatic carcinoma is well established,[6] and like castration, it will afford objective and symptomatic relief in 50 to 75 per cent of patients in seven to ten days after therapy is begun. Pain is relieved and there is reduction in the size of the prostatic gland with some relief of obstruction as a result. In addition, less metastatic growth, recalcification of bony lesions and significant reduction in the elevated serum acid phosphatase are noted. Although the disease is not eradicated, survivals of five or more years are not uncommon. It is generally accepted that the drug will control cancer of the prostate in all but about 10 per cent of patients. Why these patients do not benefit from this treatment is not known. Stilbestrol is given in doses of about 5 mg. daily.

Androgens and estrogens are being widely used in carcinoma of the breast in women. Their final value remains to be determined, but at present their importance seems to lie in their effect on the later stages of the disease, where there are skeletal and visceral metastases. Experience indicates that in women who have undergone the menopause more than ten years before treatment is begun the progress of the disease is hastened by treatment with estrogens. Testosterone propionate seems to be the drug of choice in these cases. Despite the fact that estrogens appear to be more effective than androgens in females ten or more years after the menopause, androgens may be helpful in some patients who do not respond to estrogens.

Results reviewed by the Therapeutic Trials Committee[7] of the American Medical Association in 285 cases of mammary carcinoma, associated with metastasis, and treated with testosterone propionate, show little difference in response regardless of age (ranging from 25 to 79 years). Subjective relief was obtained in approximately 62 per cent of these patients and 20 per cent showed objective improvement in soft tissue and osseous lesions. Improvement may be noted as early as two weeks after treatment is begun. Dosage is not fixed and may vary between 150 to 300 mg. weekly. Optimal response has followed the daily intramuscular injection of 25 mg. of testosterone propionate.

Osseous metastases respond more favorably and show calcification. Significant relief is obtained from malaise, anorexia and dyspnea and some of these patients become more active physically. The period of improvement varies and its duration following cessation of therapy is also unpredictable. Unfortunately, progression of the disease does occur despite subjective improvement and increasing the dosage has little effect. Prolonged administration of testosterone results in masculinization.

Estrogens also cause regression of lesions in both soft tissue and bone. The pain, malaise and anorexia are relieved and the duration and degree of response resembles androgenic therapy. Estrogens produce uterine bleeding and nausea, and in younger women growth of the malignancy may be accelerated.

Estrogens may be of little value in carcinoma of the male breast, whereas favorable effects have followed castration. Huggins[6] reported that in his clinic estrogens afforded "some temporary and partial amelioration" in cancer of the stomach, bladder and colon, and in hypernephroma. The evidence is not conclusive.

Diethylstilbestrol, in oral tablets of 5 mg. doses, is probably the most economical estrogen to use. A dosage of one tablet three times daily appears sufficient for a satisfactory response. If either estrogens or androgens are administered and a favorable response occurs, the drug need not be continued indefinitely. It seems wise, though, to give the drug for a minimum of three months.

Cortisone and adrenocorticotrophic hormones (ACTH) have recently received wide acclaim in the diseases of the collagen system. Their therapeutic value remains unsettled but they are invaluable agents for investigation. Both hormones have afforded temporary relief in some cases of acute leukemia. We have seen little benefit in the treatment of carcinoma of the breast, and it is much too soon to determine their role in the treatment of other types of cancer.

Sodium retention and eventual cardiac failure are real hazards associated with the use of hormonal therapy. In view of this it is suggested that a low sodium diet be followed and that mercurial diuretics be used when necessary. Hypercalcemia may also develop and is an indication for discontinuing treatment.

Supportive Agents

The management of patients with metastatic malignancy often requires long range planning in order to prevent later development of troublesome complications. Because of the poor prognosis general supportive measures are often overlooked and care of patients is confined to supervision of adequate opiates to maintain comfort.

Continued adequate nutrition is essential for patients with metastatic malignancy of long duration. Faulty dietary habits may soon result in hypoproteinemia or may aggravate an already existing dietary deficiency. The anemia of malnutrition will also be an added burden on diseased system, and vitamin deficiencies may manifest themselves at the expense of the patient. Bed sores, edema and anemia, as well as neuropathies are but few of the complicating conditions that faulty metabolism may precipitate. If satisfactory oral intake can be maintained, the diet should be high in calories with emphasis placed on foods rich in proteins. Oftentimes special oral protein preparations can be utilized as supplemental feedings, and by this means the total protein intake can be increased. Frequent small feedings may be preferable to three larger meals. Vitamin B complex may help to stimulate a poor appetite. It is useless and wasteful, though, to use more than the daily therapeutic requirements.

For patients whose oral intake is limited to a soft or liquid diet, the recently popularized high speed food blenders are a great aid in feeding. Unless chronic blood loss is occurring, the oral intake of iron is deficient or its metabolism is disturbed, the administration of iron is not indicated, and its use may lead to sufficient nausea to prevent eating. The administration of whole blood transfusions is the ideal means of replacement of red blood cells and protein.

If the development of ascites or edema is a possibility and if hormones are to be given, the sodium intake should be limited. The inanition produced by vomiting is best overcome by infusions of 5 and 10 per cent solutions of glucose. Vitamin supplements can be added to these infusions. Alcohol infusions are nutritive as well as sedative in their action. Sometimes alcohol infusions permit temporary reduction in the opiate dosage. Intravenous administration of protein preparations may be helpful but do not offer as much as whole blood transfusions.

Chloride loss from prolonged vomiting may be combatted with saline infusions but this should be limited to the quantity lost. Recent observations show that loss of gastric contents or vomiting from high obstruction may result in a significant blood potassium deficiency. An effort should be made to correct this deficiency which can be demonstrated by characteristic electro-encephalographic changes. Potassium chloride is given intravenously but its administration requires close supervision and familiarity with dosage and possible complications. Correction of hypopotassemia is especially indicated if operative treatment is contemplated. Full appreciation of current trends in potassium therapy can be obtained from an excellent review of this subject by Elkinton and Tarail[8].

Comfort Aids

Keeping patients with metastatic malignancy free from pain and emotionally adjusted is a major task. Fortunately, the opiates and barbiturates are effective but their efficacy is sometimes lessened by the necessity for prolonged administration. Often increasing dosages carry with them unpleasant side reactions. Because of the necessity of prolonged care, minimal effective dosages of opiates should be utilized. It seems wise in the beginning to give small quanities of codeine, or codeine with aspirin, and then increase the former as the condition requires. Of course, later, morphine and its derivatives are the only effective drugs. Dilaudid or pantopon may give the desired relief if morphine is contraindicated.

Methadon is a relatively new analgesic, three times as potent as morphine. It is also far more effective than meperidine. The undesirable side effects are not supposed to be as great as those of morphine but nausea and dizziness not infrequently follow its use. Because it lacks sedative properties, it may not be helpful in these cases. On the other hand, if the problem of oversedation occurs with other analgesics, it may be the drug of choice.

Sooner or later the attending physician is confronted with the patient's anxiety and nervousness, which can express itself in many forms. Phenobarbital is a satisfactory drug for this problem. Some of the newer synthetic sedatives may also be useful if oral administration is possible. Because bromides have an accumulative property, their use may bring on complications.

If oral analgesic preparations are satisfactory, parenteral therapy should be avoided and if the pain is of unusually severe degree at some stages, the cautious use of analgesics intravenously may be considered. Individualization of cases is a primary requisite for therapy.

Occasionally, alcohol infusions (500-1000 cc. of 5 per cent alcohol) afford some sedative action. Antispasmodics may be used as an adjunct to relieve abdominal spasms and the nausea so common in abdominal metastasis. It has been noted that atropine and scopolamine lessen the analgesic effect of methadon.

A comfort aid that is often ignored is proper bracing. This is especially true of patients with symptoms referable to the vertebral column. A cervical collar or a good back brace may allow mobilization with comfort instead of pain with inactivity.

Individual therapeutic problems may become extremely complex and often overmedication becomes a real possibility. It is best to keep therapy on a simple plane and take repeated stock of the daily medications.

Summary

The patient with metastatic malignancy offers a challenge in medical care. Palliative therapy is the line of action and lately this field has been broadened. This discussion outlines the various approaches to therapy and their application.

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Mediastinal Tumors and Cysts*

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MEDIASTINAL tumors and cysts once considered as rare, are now being diagnosed and reported more frequently with the practice of routine radiologic surveys such as were performed in the services, and are generally instituted in industry, educational systems, and public health programs.

Blades reported 109 cases of mediastinal tumors exclusive of those of lymphatic origin, which were operated upon in army thoracic surgical centers during a three-year period during the late war. Significantly of these 109 cases, 94 were asymptomatic, stressing the point that with the relative safety of present day exploration of the chest, the practice of watchful waiting is to be thoroughly condemned.

Of the most common types of tumors, exclusive of the lymphomas, the most numerous cases reported from the literature of neurogenic tumors numbered 135 and was reported by Blades. Dermoids and teratomas are among the most frequent types, and the largest number reported from the literature is by Rusby in 1944, who reported 251 cases. In 1917 Hertzler reported one case of his own and found 76 in literature. The first case was reported in 1825 by Gordon, found at autopsy. Heuer and Andrus found 230 malignant tumors of the thymus in the literature up to 1940.

Mediastinal tumors arising as they do from a large number of structures in a closely knit space are difficult to classify. A workable classification as given by Graham and Blades seems sufficient.

1. Tumors of the thyroid
2. Tumors of the thymus and hyperplasia
3. Tumors of the nerve tissue
    Neurofibroma
    Sympathicoblastoma
    Hour Glass Tumors
4. Lipoma, fibroma, chondra, and myxoma
5. Tumors of the trachea and esophagus
6. Tumors of the lymph nodes
    1) Acute inflammation; tuberculosis
    2) Hodgkins, leukemia, aleukemia, lymposarcoma
    3) Metastatic tumor
7. Cystic tumors
    1) Dermoids
    2) Teratomas
    3) Bronchial cysts
8. Vascular tumors, aneurysm of the aorta, aneurysm of the heart
9. Tumors of the heart and pericardium

For the sake of convenience these tumors are usually classified as anterior mediastinal tumors and posterior mediastinal tumors. The most frequent type anteriorly is that group of lymphatic origin, while the most frequent type of the anterior group from the surgical standpoint is the dermoid cysts and teratomas. Blades reported 233 cases of dermoids and teratomas, and only three were in the posterior mediastinum. Of the posterior mediastinal tumors the most frequent are the neurogenic tumors.

Approximately 25 per cent of all reported cases of mediastinal tumors are malignant. Of the some 300 cases of dermoid cysts reported, about 13 per cent were malignant. Neurogenic tumors are reported as being malignant in from 10 to 46 per cent, averaging about 33 per cent.

The symptoms of mediastinal tumors may be entirely absent. The most frequent symptom in all types is **dyspnea,** which apparently is due to compression of the large veins of the mediastinum, particularly the superior vena cava, rather than to tracheal compression. Other general symptoms are those of pain, cough and cyanosis. Symptoms of compression of the mediastinum with dyspnea and cough come late with neurogenic tumors. They characteristically give rise to localizing signs involving the sensory portions of the intercostal nerves with pain along the distribution of the involved nerves, or when originating in the ganglia, particularly the stellate ganglia may exhibit Horner's syndrome. Likewise with dermoid tumors, there may occasionally be expectoration of hair. There is a great deal of difference of opinion as to whether myasthenia gravis is an indication of thymic tumor. In a recent report by Eaton and Clagett it was indicated that the treatment of myasthenia gravis by thymectomy was unsuccessful. They advise thymectomy only when an operable thymic tumor can be diagnosed radiologically. Bronchogenic cysts and dermoids may exhibit recurrent bronchial compression and atelectasis, due to involvement of the bronchial tree. In most instances lymphomas will be seen bilaterally.

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*Read before the Section of Surgery at the thirty-second annual session of the Mississippi State Medical Association, Biloxi, Miss., May 9-11, 1950.

The most important aid is the roentgenogram, particularly when made in different planes. For more accurate localization these may be supplemented by fluoroscopy, bronchoscopy and bronchography. Angiocardiography may be used to rule out aneurysm. As previously stated anterior tumors are most likely to be lymphomas, dermoids or teratomas, while posterior shadows may possibly indicate neurofibroma or neurofibrosarcoma. Large bilateral lesions frequently indicate metastatic malignancy from perhaps the breast or thyroid gland. Many cases will still be incompletely diagnosed until thoracotomy is performed. Aspiration of tumors near the surface is mentioned only to be condemned.

The treatment of mediastinal tumors is generally surgical. With the exception of the anterior mediastinal tumors of lymphatic origin, they should all be explored. The lymphatic tumors of neoplastic origin should be given a course in radiation therapy, bearing in mind that it is often necessary to wait a period of one month for response. If at the end of that time no response is noted, these should be explored surgically.

Ideally these tumors should be diagnosed and thoracotomy performed before symptoms appear. It is known that with the onset of symptoms, growth with spread has occurred, and the increasing probability of malignant change. Whereas nearly all of these tumors may be completely removed before they become malignant, practically none may be completely removed after malignancy develops. In fact, Graham states that he knows of no five-year cures of malignant mediastinal tumors other than an occasional case of Hodgkin's disease treated radiologically. The surgical approach is determined by the location as well as the size of the tumor. Small tumors may be removed without rib resection, even larger ones may be removed by division of one or more costal cartilages anteriorly with suture immobilization of the divided cartilage afterward. For larger tumors, rib resection may be necessary.

In the case of dermoid cysts it is considered much better to remove the entire tumor, even though some segments of lung may be sacrificed than to marsupialize them as was frequently done in the past. Laminectomy may be necessary to remove the intravertebral portion of hour glass neurofibromas.

As in all cases of chest surgery, the patient must be in good condition. The use of whole blood transfusions, antibiotics, vitamins and care of the tracheobronchial tree in the preoperative, operative and postoperative periods are prerequisites. The value of the trained anaesthesiologist is inestimable.

During the past year we have had 14 cases of mediastinal tumors, which have been explored. Of these, five were mediastinal thyroids, four of which were posterior mediastinal in position, two were metastatic lesions to the anteriormediastinal glands, and there was one each of teratoma (chorionepithelioma), dermoid cyst, bronchogenic cyst, neurofibrosarcoma, aneurysm of the innominate artery, one foreign body and one tuberculoma.

Several cases are shown as being typical of the various types. The thyroid cases represent the entire descent of the thyroid adenomas from the neck to the diaphragm.

A 22-year-old colored male was admitted to Mississippi Baptist Hospital on May 27, 1949, with a history of pain in left chest of about six weeks' duration. There was also a slight production cough and low grade fever, 99 degrees-100 degrees. On physical examination there was marked dullness in the left lateral lung fields. There was a loud rumbling presystolic murmur. He was at first thought to be suffering from rheumatic heart disease. Roentgenograms of the chest revealed a large tumor mass arising from the anterior mediastinum and extending into the lung fields. On June 8, 1949, the chest was explored through a left posterolateral incision with resection of a segment of fifth and sixth ribs paravertebrally. The large necrotic appearing tumor of the anterior mediastinum was seen to invade the left upper lobe and pericardium. Biopsy was obtained since the tumor was not removable. Postoperatively the patient was given x-ray therapy. He has not been heard from in the last four months.

CASE REPORT: (Dermoid Cyst)

Mrs. C. B. a 23-year-old housewife was admitted to Mississippi Baptist Hospital on April 14, 1950. A routine photo x-ray was made three years previously at which time a growth in the chest was noted. She was advised to watch the growth. There was a gradual increase in size. On admission she complained of pain in the left shoulder and apex of left chest. She had recurrent attacks of virus pneumonitis; had occasionally spit up small amounts of blood. Physical examination was negative, except for dullness in the left apex anteriorly with impaired breath sounds. Fluoroscopy revealed a mass in the left lung field which seemed to be anterior. Roentgenograms with esophagography revealed the tumor mass in the left anterior chest. Sputum for acid fast organisms were negative. The patient was operated on April 4, 1950, through a left posterolateral incision. The tumor found to be a dermoid, was isolated with difficulty because of adhesions. A segment of the lingula of the left lobe would not expand, and a segmental resection was done. The chest was closed with water seal drainage anteriorly and posteriorly. Postoperative course was uneventful and patient was discharged on April 12, 1950, after an uneventful recovery.

CASE REPORT: (Mediastinal Goitre)

M. C. colored female, 45 years old, was admitted to Mississippi Baptist Hospital on May 21, 1949, with symptoms of smothering and choking and retrosternal discomfort for six years. Past history was significant in that she had a nodular goitre removed in June 1942, at which time an x-ray of the chest revealed the tumor and thoracotomy was advised but declined. The x-rays and fluoroscopy here revealed the tumor mass. On June 2, 1949, the thorax was opened through the bed of the fifth rib. A large tumor mass measuring 200x280x100 mm. was found sitting on top of the diaphragm and filling both the posterior and anterior mediastinal divisions. The blood supply was from the mediastinum by a broad stalk; it was very abundant. The tumor mass was removed and proved to be a nodular goitre. The postoperative course was uneventful. The patient is now free of symptoms. We have had three other mediastinal thyroids at all levels of descent, but this one is by far the largest and thus had descended farther.

CASE REPORT: (Neurofibrosarcoma)

J. C., a colored male age 48, was admitted to Mississippi Charity Hospital on September 24, 1949, with a history of pain in chest radiating along the intercostal and originating in the dorsal region. The pain was similar to pleurisy. There was also some urinary retention. Duration of symptoms was about four months. X-rays of the chest in the AP and lateral views revealed a tumor mass apparently of the posterior mediastinum. It was difficult to differentiate from an aneurysm, and an angiocardiogram was made ruling out aneurysm.

While awaiting thoracic exploration the patient developed a paralysis of the lower extremities and was explored by the neurosurgeon, who found a neurofibrosarcoma. At autopsy the lesion in the chest was found also to be a neurofibrosarcoma.

CASE REPORT: J. L. D., ten-weeks-old white male infant, had presented increasing respiratory distress since birth. Initial resuscitation was quite difficult. Thereafter the patient coughed nonproductively more or less constantly. After spells of coughing or crying he became markedly cyanotic. Feeding was frequently interrupted by paroxysms of coughing with resultant cyanosis. Physical examination revealed a well-developed white male infant in obvious respiratory distress. Respirations varied from 36 to 44 and were shallow. The left chest seemed larger than the right, was hyperresonant and presented decreased breath sounds. Repeated x-ray studies showed the heart and mediastinal structures to be markedly displaced to the right with compression of this lung and emphysema due to obstruction of the left main stem bronchus. Lipiodol esophagram revealed a filling defect in the midportion of the esophagus just below the bifurcation of the trachea, which was not constant on the films. The child had been bronchoscoped on three different occasions with essentially negative findings except for an apparent extrinsic constriction of the left main stem bronchus. There was no evidence of intra- or endobronchial obstruction.

As the child's respiratory status was slowly growing worse, exploratory thoracotomy with a preoperative diagnosis of pulmonary cyst or obstructive secondary to an enlarged hilar node or aberrant blood vessel was made. Exploratory thoracotomy under endotracheal anesthesia was done through a left posterolateral incision overlying the sixth interspace. As the pleura was opened the underlying emphysematous lung failed to collapse but herniated into the wound, much as does the intestine in an unrelaxed patient. We were unable to collapse the left lung with gentle manual compression. A thin-walled cyst about the size of a lemon was found in the posterior mediastinum just below the bifurcation of the trachea. Another cyst was producing a check-valve type of obstruction of the left main stem bronchus so that inspired air could enter the lung as the tracheobronchial tree relaxed with inspiration but was unable to leave the lung during expiration. As soon as the liquid contents of the cyst were aspirated the lung began to have normal respiratory excursions. The cyst wall was then removed with relative ease and the chest closed in layers with one catheter which was connected to a water trap. Postoperative convalescence was surprisingly smooth. Respiratory function seemed clinically normal at the time of discharge from the hospital. X-ray six weeks after operation reveals only slight shift of the mediastinum. The child is clinically well.

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Discussion

Dr. J. Harvey Johnston (Jackson)—In the time allotted I would like to discuss the rather large group of clinically indeterminate intrathoracic lesions. In spite of the most painstaking work-up with varied roentgenograms, repeated sputa examinations for acid-fast organisms, fungi and neoplastic cells (Papanicalou studies), bronchoscopy, bronchograms, angiocardiography, etc., the diagnosis remains questionable or obscure in a significant number of cases. We are then confronted with two modes of therapy: 1) exploratory thoracotomy and 2) observation. I know of no form of therapy that is more misused than so-called conservative therapy or observation. It is perfectly true that short periods of observation lasting from several days to several weeks are often justified. On the other hand, observing indeterminate lesions for long periods of time, hoping and praying for spontaneous improvement or regression and ignoring the probability of an underlying malignancy is often ridiculous.

We as physicians are using exploratory thoracotomy too little and too late. The advances in anesthesiology, antibiotics and intelligent use of whole blood have made exploratory thoracotomy a safe procedure. Although it is on a par with abdominal exploration, both as to safety and accuracy, there is still a great deal of hesitancy on the part of the average physician to refer a patient with an unexplained pulmonary disease for exploratory thoracotomy, even though the same physician would feel no hesitancy in insisting on abdominal exploration. We must develop a similar attitude toward exploratory thoracotomy if we are to make significant progress in the treatment of intrathoracic lesions. Thus we should handle undiagnosed lesions of the chest just as we manage undiagnosed lesions of the breast, that is, by surgical exposure with biopsy and immediate tissue study determining the operative procedure necessary.

In the last two decades remarkable progress has been made in the operative and immediate pre- and post-operative care of intrathoracic lesions. Near technical perfection has been attained in many pulmonary operations, yet too few patients derive benefit from the operative excellence that has been attained. Diagnostic procedures have not kept abreast of the technical advances. As exploratory thoracotomy is our only means of establishing early diagnosis in many intrathoracic lesions, it must be advised earlier and without hesitation. Only by establishing earlier diagnosis are we to improve our results in thoracic malignancies.

Doesn't it seem somewhat of a paradox that we can observe a patient, utilizing innumerable x-rays, diagnostic procedures and placebos until he dies of widespread and obviously incurable malignancy, and still call such observation conservative treatment? I personally think it much more proper to classify exploratory thoracotomy in the indeterminate intrathoracic lesion as conservative therapy and indiscriminate prolonged observation as a most radical means of "therapy."

Dr. Lee R. Reid (Jackson)—In my early days in thoracic surgery the greatest emphasis was placed on attempts to make an exact diagnosis of mediastinal tumors by x-ray methods. This was principally because of the fact that we knew that a large number of these mediastinal masses were benign and asymptomatic and follow up x-rays for years showed no change whatever.

We were aware, of course, that a definite percentage of these tumors became malignant. Our problem was to attempt to pick out the masses by x-ray that because of their position and radiological conformation did not constitute much of a threat to the patient in our experience. The patient was then followed by frequent x-rays. If the mass increased in size then we recommended removal. The trouble was that occasionally by the time the x-ray showed a change the tumor had already undergone malignant degeneration and operative relief was uncertain.

In the light of present day thoracic surgery such a weak-kneed policy seems inexcusable. But those were the days before we had a clear understanding of respiratory physiology, before the use of massive transfusion to prevent shock, before the day of intratracheal anesthesia with the anesthetic agents now available, and perhaps most important before the advent of the antibiotics.

To open the chest in those days was a procedure associated with many hazards and our policy towards mediastinal masses especially asymptomatic ones is at least understandable.

There are few instances in medicine where the accepted policy has undergone such a reversal. Now, with all the improvements mentioned above there is little excuse to temporize and usually the problem is simply one of being able to talk the patient into accepting an operation, which sometimes requires considerable tact and persistence especially in asymptomatic cases found on routine survey.

As Dr. Twente has mentioned differential diagnosis before exploration is almost impossible except in the extremely rare instances where a cyst such as a dermoid has ruptured into a bronchus and the contents have been expectorated.

Since about one out of four mediastinal tumors are malignant and it is practically impossible to tell which ones are, or will become malignant, if a mediastinal mass is found exploration is not only indicated but mandatory. This is true especially today because of the relative safety of thoracic exploration. I think it should be emphasized however in passing that although the chest can be safely opened now, it still does not mean that it is now a "kitchen table" procedure. The surgeon who opens a chest should do so only under the most ideal surgical setup. Most important with an anesthetist who has had experience in intratracheal anesthesia and with proper instruments, plenty of transfusion blood available, and with an experienced nursing team for post operative care and either be equipped for and experienced in bronchoscopy himself or have a bronchoscopist available.

Under these circumstances only can it be stated, as it has become fashionable of late to state, that the chest may be opened with the same impunity as the abdomen.

I have slides on two cases of unusual interest. The first is on a 56 year old woman sent in with a diagnosis of mediastinal tumor and operated on with that diagnosis. This shows an P. A. view with the large mass in the right lower chest. The second slide is a lateral showing the posterior position of the mass.

Operation disclosed a diaphragmatic herniation of a portion of the liver. This was repaired and the next slide shows a six month check-up film. This demonstrated an exceptionally rare condition that has always been confused with mediastinal tumor. No preoperative diagnosis of congenital herniation of the liver alone has ever been made that I was able to find out by review of the literature. It is always called a mediastinal tumor.

The next series of slides are also of extreme rarity. They show by a series of x-rays the first appearance of a mediastinal cyst and trace its development until the condition became symptomatic and the patient agreed to its removal. First slide shows a normal chest x-ray, taken because of exposure to tuberculosis. This was in 1944.

The next slide was after an auto accident two years later, taken Dec. 1946 shows definite mass. Refused operation at this time but agreed to x-ray check-ups at frequent intervals.

The next slide taken in June 1949 shows a gradual increase in size. The next slide is a laminograph of the cyst taken at same time. Cyst was removed off the arch of the aorta and recovery was uneventful.

I know of no other series that shows the development of a bronchogenic cyst from before its first x-ray appearance.

NOTICE

The American College of Radiology has instituted a course of instruction in Radiologic Defense underlining the responsibility of radiologists in atomic attacks, and it is suggested that State Medical Associations and County Medical Societies avail themselves of the services of local radiologists in the development of the local civil defense program.

The eighteenth annual conference of Teachers of Clinical Radiology will be held Saturday, Feb. 10, at the Palmer House, Chicago.

Practical X-Ray Pelvimetry*

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THE purpose of this discussion is to bring to the attention of this meeting what would appear to be the basic and practical aspects of pelvimetry as determined by x-ray studies, and to encourage the free use of these studies.

In the past several years we have been routinely raying all primiparas as close to term as possible and this relatively short series now includes two hundred and fifty cases.

The method of measurement employed has been that of Ball, which we believe can be reduced for practical purposes, and for the use of the general practitioner, to two essential and easily determined measurements, namely the interspinous and the post sagittal. These measurements, when added together produce an index, or a third indication as to the capacity of the mid-pelvis, the trouble zone in obstetrics.

Following the suggestions of Eller and Mengert we have assumed that with a sufficient decrease in the intra-spinous diameter, it is apparent that the bulk of the fetal head must pass either anterior or posterior to the spines. It is for this reason that the posterior sagittal is important, as the bulk of the fetal head usually traverses the hind pelvis.

Various authors have settled on varying minimum measurements in their attempts to determine a definite criteria for the anticipation of dystocia. In the case of the interspinous measurement, or the shortest transverse diameter in the pelvis, it ranges from 9 cm to 10 cm. In this series the average interspinous diameter was 10.6 cm with the shortest of 7.5 cm and the largest at 12.1 cm. We have been alerting ourselves when the interspinous is 10 cm. or less, when the index falls below 14 cm and the baby is of average size or above.

There is no satisfactory way, other than by x-ray, of determining these factors. They do not apply, of course, to the grossly distorted pelvis such as that produced by congenital defect, disease and trauma. Nor do these exact figures consider the moulding of the fetal head and other variables of labor. But if, for instance, each primipara, and each multipara with a suspicious history could be rayed prior to term, we feel that much of the sweat and tears of obstetrics could be eliminated, if as a result, these midpelvic factors were taken into account.

The following case will serve as an example of a contracted mid-pelvis. This patient was rayed approximately two weeks prior to term. The following dimensions were obtained: The interspinous was 9.7 cm, the post-sagittal was 4.1 cm, and these two measurements added gave an index of 13.8 cm.

Without the intervention of labor, this patient was re-rayed 17 days later. The fetal skull had increased in volume and the patient shortly began an active labor. She was followed on the table for 8 hours with no progress to the spines. Based on pre-determined midpelvic contraction as determined by these x-ray studies, and without progress following what we considered a fair trial, a section was successfully performed.

With our increased use of x-ray, as an aid in anticipating dystocia, other disturbing obstetrical conditions have been brought to light, such as the following:

Case 2. This is an instance of fetal death prior to the onset of labor.

Case 3. A face presentation was given a 5-hour trial and sectioned following lack of progress.

Case 4. A pre-diagnosed erythroblastosis fetalis.

Case 5. In this case the intra-spinous measurement was adequate, the post-sagittal adequate, and the index therefore within normal limits. Failure of the head to descend was attributed by x-ray to an abnormally positioned placental shadow. Section was performed and the x-ray diagnosis proved correct.

Conclusions

1. Make free use of any available x-ray facilities. Any practitioner who is doing obstetrics and who has access to x-ray can take most of the guesswork out of his deliveries with a ruler and without usually the aid of a trained roentgenologist.

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*Read before the Section on Obstetrics and Gyn. at the eighty-second annual session of the Mississippi State Medical Association, Biloxi, Miss., May 9-11, 1950.

2. The free use of x-ray pelvimetry very frequently places one on guard by revealing abnormalities which would be impossible to predetermine otherwise.

3. When the intra-spinous diameter is 100 cm or less and the index falls below 14, some degree of mid-pelvis dystocia may be expected.

4. Do not depend on a roentgenologist to deliver your baby. As we all know, some of these tight measurements precipitate.

Discussion

Dr. Sam Levi (Gulfport) — Dr. Melvin has very briefly covered a subject on which many volumes have been written. Time does not permit me to delve deeply into any of the numerous methods of roentgen pelvimetry. They all have merit, advantages and disadvantages.

We use a modification of the Ball method which employs the principles of triangulation. Anteroposterior and lateral films are made and the internal pelvic diameters both sagittal and transverse are measured at selected levels from the inlet to the outlet. These are corrected for distortion by slide rule or tables and the corresponding volume capacities are calculated and compared with the volume of the fetal skull. Allowance is made for moulding at the level of the ischial spines. In the normal state the smallest diameters are the true conjugate or anteroposterior of the inlet and the interspinous or transverse at the level of the spines.

The sagittal diameters can be compared with the skull at a glance. Utilizing a 40-inch target film distance, a true conjugate of 14 cm on the film, when corrected, as a rule becomes 11 cm which we consider average. The actual film measurements will of course vary with the patient since distortion is proportionate to the size. The interspinous diameter usually appears smaller than that of the skull and has to be evaluated by measurement. Dr. Melvin's base line of 10 cm on the average is 11.3 cm on the film. Above 10 cm the posterior sagittal at the level of the spines is usually not important. Below 19 cm we need a posterior sagittal of over 4 cm as measured from the superimposed tips of the ischial spines to the sacrococcygeal junction. On the film this is about 5 cm. The sum of the interspinous and posterior sagittal diameters is called the index. If this equals 14, the pelvis is adequate for an average term skull. To superimpose the ischial spines, the technician should be instructed to center on a point halfway between the anterior superior spine of the ilium and the greater trochanter of the femur. The patient's back must be perpendicular to the table.

Dr. Melvin has shown an example of fetal death. The roentgen findings are abnormal posture due to collapse of the spine, overlapping skull bones before labor and discrepancy between fetal size and duration of gestation.

Dr. Melvin has shown an example of fetal death. The roentgen findings are abnormal posture due to collapse of the spine, overlapping skull bones before labor and discrepancy between fetal size and duration of gestation.

In the case of an Rh negative patient, the fetal skeleton should be carefully scrutinized for roentgen evidence of erythroblastosis fetalis. The literature has described sclerosis, dense transverse stripes in the juxtaepiphyseal portions of the long bones, Buddha-like habitus due to hepatosplenomegaly and an enlarged edematous placenta.

In placenta previa you noted that the skull did not descend into the pelvis. Marginal insertions result in an eccentric position of the fetal skull in relation to the inlet. A distended urinary bladder must be excluded by instructing the patient to void prior to examination. If at all possible, the films are to be made in the upright position.

The face presentation is self-explanatory. We scan all films for multiple skeletons and fetal abnormalities and note the presentation and position. Pelvic type is determined from the inlet and asymmetry or other osseous abnormality is called to the attention of the obstetrician. Fetal age is roughly estimated from the circumference of the skull and visible epiphysis in the region of the knee usually indicate term.

I believe x-ray is an important adjunct. Small measurements foretell dystocia and ample diameters comfort the obstetrician when prolonged labor occurs due to other causes.

Discussion

Dr. Joe P. Evans (Gulfport)—Eller and Mengert, **American Journal of Obstetrics and Gynecology,** February, 1947, claim that adequate recognition of mid-pelvic contraction demands roentgenologic mensuration. In a certain sense, this is unfortunate because of indifferences or antagonism to roentgenographic pelvimetry in certain quarters. There are two chief reasons for failure of widespread acceptance: 1) technical difficulties of many of the methods currently employed preclude general use; and 2) roentgenologists have often invaded the domain of obstetrics and ventured wholly unjustifiable opinions concerning the prognosis of labor, ignoring such variable factors as size and malleability of the fetal head and the force of the uterine contractions.

For the past three years we have been doing routine x-ray measurements on all primipara and on any multipara where indicated. We feel that it has been a great help in determining our method of procedure. All other factors plus the x-ray findings help to make the proper decisions. These routine plates for measurements will also reveal many other complications that had not shown any signs or symptoms to make you suspect the condition, such as placenta previa, monstrosities, erythroblastosis fetalis, face presentation, and other abnormal positions, all of which can be handled properly as long as you know what is there.

As Dr. Melvin has said in his paper, we do not let the roentgenologist deliver our babies, but we do feel that his x-ray measurements and plate are a great help to the obstetrician.

Quoting Dr. A. B. Nash, Victoria, B. C., **American Journal Obstetrics and Gynecology,** March, 1950: "We believe that x-ray pelvimetry, judiciously employed, is a reliable and important adjunct to obstetrical practice and that it may be usefully employed in rendering obstetric judgment more accurate. We wish to refute any suggestion or implication that it can be substituted in whole or in part for sound obstetrical knowledge.

Cardiac Emergencies*

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General Considerations

HEART disease is of more than academic interest. I can only try to outline current medical opinion as to the management of some of the more common acute conditions resulting from cardiac pathology or disturbed physiology.

It is probable that many of these cases might have had their crises postponed or prevented by early attention. The best results are obtained by treatment during the "predecompensation stage[1], that is, at the first evidences of failing compensation. While they do not come within the scope of this discussion, I should like to mention two considerations often overlooked. First, in making our study of all cardiac cases we should search carefully for stressful situations in the business, social, and domestic environment.[2] These may act as initiating or perpetuating factors. Second, in planning long-term treatment we should remember that the patient often has a family and various other obligations,[3] and he may have hopes and plans almost as dear as life itself.

Before proceeding to discuss emergency treatment it may be well to consider some of our armamentarium.

DIGITALIS—The isolation of the active principles of digitalis lanata and the revival of digitoxin have resulted in much interest in the study of the digitalis glycosides in general. Recent medical literature on cardiology is concerned largely with the use of powdered digitalis leaf, digitoxin, digoxin and lanatoside C. There is some mention of digalen, gitalin, ouabain and strophanthus derivatives. Rarely we hear of such products as urgenin and khellin.

It is suggested that the clinician for the most part, confine his study and use to a selected few of these preparations that he may be a worker thoroughly familiar with his tools.

Rapidity of Action and Duration of Effect— Acetyl strophanthidin intravenously shows an effect almost at once, which lasts from one to two hours.[4]

Ouabain intravenously shows some effect in 10 minutes, and is over in twenty-four hours.[4]

Lanatoside C and digoxin come next in rapidity of action, and the duration of their effect is from forty-eight to seventy-two hours.[4]

Digitoxin intravenously produces its full effect in six hours which may still be present two or three weeks later. It is completely absorbed when given orally.[4]

Dosage for digitalization and for maintenance naturally varies from case to case and may vary with the same patient at different times.

For rapid (24-hour) digitalization, the following averages have been suggested by Stewart:[5] Whole leaf 1.8 Gm. Digitoxin 1.2 to 2 mg. DeGraff[4] found digitoxin dosage for full digitalization to range from 0.8 to 5 mg. with an average of 2.2 mg.

For routine use (not emergencies) the powdered leaf is usually preferred.[5, 6, 7] Digitoxin comes next in popularity. For emergency use lanatoside C[8] and digoxin[8, 9] given intravenously are probably the preparations of common choice. Intravenous use is best reserved for cases in which a rapid effect is desirable or where the oral route seems inadvisable.

In 1948 Gold[10] published a study of the use of digitoxin. His recommendations were construed by many as advocating a rather definite routine one dose (1.2 mg.) digitalization and there was quite a lively discussion in the medical journals. Some contended that such a scheme was fraught with danger. One result of the discussion was a number of reports on the glycoside dosage and on the toxicity of digitoxin. Digitoxin causes fewer gastro-intestinal symptoms than the leaf — but the very absence of these early, mild symptoms of toxicity may mask more serious developments.[11, 12] In a large series Levine reported 0.9 per cent of toxic arrhythmias in patients taking the powdered leaf, and 2 per cent in those taking digitoxin.

I prefer cedilanid for intravenous use, and the powdered leaf in sealed capsules (factory filled) for oral use unless it causes nausea, in which case digitoxin is employed.

QUINIDINE—Many writers urge that a small experimental dose of quinidine be given to test for idiosyncracy before beginning regular dosage. I have never observed an instance of such unfavorable side effects other than a mild tinnitus.

The concurrent administration of quinidine and digitalis is still a moot question,[13] although a rather common procedure.[14] Quinidine gluconate has been recommended for intramuscular administration. The clinical effect may be observed as early as 15 minutes. The injection causes little local discomfort.[15]

MERCURIAL DIURETICS — Recent years have seen much change in the character and use of these agents. Intravenous administration has been found to be too dangerous to be employed except in emergency. We now have satisfactory preparations for intramuscular and for hypodermic use. Popular choice lies between mercuhydrn given intramuscularly and thiomerin, hypodermically. The newer preparation, thiomerin, does not act as quickly but the effect is of longer duration.[16] "There is no pharmacological evidence that mercurial diuretics have any direct stimulating action on the myocardium, and the most probable explanation of the fall in venous pressure and rise in cardiac output is a venesection-like influence of the mercurial through blood volume reduction."[17]

Ammonium chloride (1 or 2 gm. three times a day) increases the effectiveness of the mercurial about 25 per cent. In many instances it will be the deciding factor in determining whether diuresis will occur at all.[18]

We should remember that there may be danger in the use of any of these mercurials, even though they are not given intravenously.[19] Most of the reported deaths seem to have been the result of overtreatment, resulting in excessive dehydration and salt depletion, or to direct damage to the kidney. In some instances danger signals such as high blood urea nitrogen were disregarded or the drug was employed in the presence of advanced primary renal disease.[7-20]

ANTICOAGULANTS—Heparin and especially dicumerol have grown in use as laboratory measures have improved and statistics have accumulated, showing their benefits and comparative safety. Nichol's report[21] of 15,500 cases showed 2 per cent of major hemorrhage and 4 per cent of minor, with 0.18 per cent of deaths due to the use of anticoagulants. In Nichol's report[22] on the long continued use of dicumerol (3 to 62 months) one-third showed hemorrhage, half of these of major degree. The need of the prevention of pulmonary embolism in treating certain heart conditions is well recognized. In Moran's report[23] on 140 autopsies in cardiac cases, 13 had suffered massive and 29 minor pulmonary embolism. The consensus today is in favor of the routine employment of anticoagulants in the treatment of thrombotic heart disease. Herrmann[24] has recommended their use in the presence of low blood pressure or embolism.

Stroud[25] does not seem convinced of the wisdom of their routine employment. Wright et al[26] found that 800 cases of coronary occlusion showed 15 per cent of deaths in those using anticoagulants and 24 per cent in those not using them. Three per cent of the cases using anticoagulants died of thromboembolic complications, while 10 per cent of the controls died of this cause.

MORPHINE is almost routinely employed, at least in the beginning, in such conditions as acute coronary insufficiency, coronary occlusion and acute congestive failure. It may be used in amounts sufficient to meet the requirements of the case—and no more. If the patient when seen has reached the stage of exhaustion or is in extremis, it is often inadvisable to employ it.

ATROPINE—The wisdom of using atropine with morphine in a cardiac emergency has been discussed pro and con through the decades. Present opinion is in its favor.[25, 27, 28]

OXYGEN—Opinion as to the employment of oxygen in heart disease varies much as between different clinicians. It is generally considered indicated in the presence of cyanosis, air hunger or persistent severe pain. If an oxygen tent is used care should be exercised to prevent chilling of the part of the patient's body that is in the tent.

Treatment

SUPRAVENTRICULAR TACHYCARDIA—

Simple paroxysmal tachycardia is classed among the functional arrhythmias. Unless a patient is accustomed to these attacks, they may be quite alarming, and may be dangerous if they persist long enough to cause myocardial failure. Nodal tachycardia may indicate a diseased heart.[29]

Many of the victims of this condition are familiar with some simple measure that will terminate an attack. These include such procedures as taking a deep breath and holding it as long as possible, assuming a posture of hyperflexion, or the induction of belching or even emesis. A measure which is often effective is carotid sinus pressure. With the patient in dorsal decubitus, pressure is applied on one side for about ten seconds, and if results are not obtained, pressure is made on the other side after a few moments. Pressure should not be applied on both sides at the same time. In rare instances pressure even on one side may precipitate a convulsion. Ocular pressure has been recommended, but I have never employed it. Intravenous digitalis in fairly large doses has been used with benefit.[30] Digitalis[31] and digitoxin have been reported as causes of tachycardia. Quinidine in 5 grain doses, every two to four hours, is a time-honored remedy and has a fair percentage of efficiency. Some prefer to try intravenous digitalis first, then if no results, to give quinidine. Gold[13] recommends 3 U.S.P. units of a digitalis glycoside intravenously. If no results are obtained sinus pressure is applied; if no results in 30 minutes, 1 unit more is given intravenously followed by sinus pressure. This may be repeated in 30 minutes. If the arrhythmia still persists quinidine in 10-grain doses is given every two hours for three to four doses.

NEOSTIGMINE — This is decidedly my choice of the whole field. Two cc. of the 1 to 2000 solution is given intramuscularly and the area massaged. If the arrhythmia has not subsided in 15 to 20 minutes, carotid sinus pressure is applied. If no results are obtained, the neostigmine followed by pressure is repeated in about half an hour. In those subject to frequent attacks of this arrhythmia, quinidine is the most valuable agent for prevention.

VENTRICULAR PAROXYSMAL TACHYCARDIA—This condition presents a serious emergency. Eggleston[29] recommends quinidine 5 grains every three hours until effect. If quinidine fails, large doses of atropine are employed. Gold[13] recommends quinidine 10 grains every two hours, but he cautions that the patient should be examined before each dose. Quinidine apparently has value in preventing this arrhythmia.

PAROXYSMAL AURICULAR FIBRILLATION—It is rather difficult to determine therapeutic results in these cases as the arrhythmia tends to come and go. Some treat this as established fibrillation. Some use quinidine first and digitalis only if quinidine fails to give results.[33] Some of us prefer to try the digitalis first. Either of these agents may be useful in preventing attacks in those subject to their frequent occurrence.

AURICULAR FIBRILLATION — When the patient is seen soon after the beginning of an attack, full immediate digitalization may not be indicated. This is particularly true if the fibrillation appears in the course of some condition such as pneumonia, which is associated with a high degree of toxemia, and especially in the absence of congestive failure. A satisfactory plan in these cases is to give 6 grains of digitalis by mouth every 12 hours until satisfactory results are obtained, toxic symptoms develop or the inadequacy of the treatment has been demonstrated. The patient should be examined before each dose. I have found very satisfactory, the tincture put out by the best manufacturers in one-ounce bottles. One fluid drachm is given at each dose. In such conditions as pneumonia, normal rhythm will often be established after the first or second dose. When no toxic process is present and the history indicates that the arrhythmia is recent and there are no evidences of cardiac failure, the first three doses of digitalis may be given eight hours apart; then 6 grains every 24 hours until some type of result is established. Should the heart rate drop below 80 without the fibrillation being corrected or should toxic symptoms develop or the apparent limit of safe dosage be reached without the arrhythmia being corrected, it is better to stop digitalis and resort to quinidine. Some prefer to wait a day or two before beginning the quinidine. Quinidine may be administered 5 grains every 4 hours. If, at the end of two or three days, fibrillation is still present, the quinidine may be doubled for 24 or 48 hours and then stopped for a day or two to observe results. The patient should of course be examined before each dose of quinidine or at least the pulse noted by the nurse.

If there is any indication for urgency the first two or three doses of digitalis may be administered intravenously. I prefer cedilanid. Many believe there is rarely an indication in auricular fibrillation without failure for one dose digitalization.

The maintenance dosage is about 2 grains of digitalis. Of course each case must be individualized. If digitalis causes nausea, the maintenance dose may be continued with digitoxin 0.1 to 0.2 mg., or whatever amount is found indicated.

When auricular fibrillation is of longstanding and the patient is comfortable and maintaining his activity without embarrassment, it is often wise not to try to restore a normal rhythm. One reason is that these patients seem peculiarly susceptible to the development of psychoses. Some have claimed that this is a direct digitalis effect; others that it is due to change in the cerebral circulation.

PAROXYSMAL AURICULAR FLUTTER—If the history indicates that these paroxysms are of frequent development, it is well to treat just as for established auricular flutter. If the attacks are infrequent and not particularly disturbing. the digitalis effect may be slowly built up until a satisfactory dosage is established. If results are not obtained, quinidine is the next agent of choice. In any event, a maintenance dose of the correcting agent should be continued.

AURICULAR FLUTTER—We refer here to the established arrhythmia. Digoxin has been recommended in a single digitalizing dose of 3.5 mg., and a maintenance dose of 0.5 mg. or whatever amount is found necessary. The preference for this agent is based on the fact that it is rapidly dissipated.[9]

Another suggestion[13] is to begin the treatment with quinidine because if it fails, it is rapidly eliminated and digitoxin can be started after 12 hours with a clear field. The digitoxin dosage recommended is 1.2 mg. at the first dose. If normal rhythm is not restored, 0.2 mg. is given every six hours until satisfactory results or minor toxic symptoms develop.

If there is no indication for urgency, I prefer to treat just as for auricular fibrillation, except that if digitalis converts the auricular flutter to fibrillation, further medication is withheld to see if the fibrillation will not spontaneously revert to normal rhythm. If it does not, then quinidine is used. Lewis classed quinidine as 20 per cent as efficient as digitalis in the treatment of flutter.

HEART BLOCK—First it should be remembered that this condition indicates advanced heart disease. Three degrees are recognized; first, delayed conduction; second, skipped beats; and third, A-V dissociation. Aside from the general care of the patient, it is doubtful if we have anything that is of material value in this condition. It has been suggested[25] that if there are no symptoms of circulatory embarrassment, no treatment be employed. When there are symptoms of distress, many agents have been suggested. Among these are ephedrine, 25 mg. four times a day. Aminophylline and papaverine are also employed at times. Thyroid has been advocated. It is possible that atropine has been found at least as satisfactory as anything else.

STOKES-ADAMS SYNDROME — Vander Veer[30] has suggested that in patients with a basic normal rhythm or a partial block, the attack is caused by a shift to complete block and that digitalis may help by maintaining this complete block. "A good complete block is better than a bad partial block." It has also been stated[30] that in patients with complete block, the attacks are due to a prefibrillary ventricular tachycardia, or ventricular fibrillation, and that quinidine may help. Here again I believe that atropine 0.5 mg. three times a day may be of definite service. Patients subject to these attacks should not undertake any effort, such as driving an automobile, that might be dangerous to themselves or render them a hazard to others.

ANGINA PECTORIS—An attack of what is usually known as angina pectoris is probably best relieved by absolute rest, quiet, reassurance and nitroglycerin. If a hypodermic tablet of nitroglycerin is placed under the tongue, it is usually felt in less than two minutes. In some patients this agent causes considerable discomfort, and unless the tolerance is known, not more than 1/150 grain should be employed. It may be repeated every 5 or 10 minutes if necessary. This procedure probably has considerable diagnostic value. If it does not give relief, the attack is probably more than the simple angina of effort. Whiskey is preferred to nitroglycerin by some but not by all[34], and both are sometimes used. Among other agents recommended are caffeine sodio-benzoate, coramine, papaverine and aminophylline. For relief of attacks, these last two are given intravenously. If there is evidence of shock, the patient should be treated accordingly.[24]

STATUS ANGINICUS—carries a graver significance. "In the great majority of cases, the syndrome of angina pectoris gravis acuta leads to coronary thrombosis or cardiac infarction."[35] It is possible that in a large percentage of cases, these graver conditions are the cause and not the results of the patient's angina.[19]

Nicotinic acid has been recommended as 100 mg. dissolved in 500 cc. of saline or 5 per cent dextrose and administered intravenously at the rate of 1.5 to 2 cc. a minute, or just enough to maintain slight flushing. This is repeated in 12 hours; then every 8 hours for 5 days.[24] It is well to consider every case of persistent angina pectoris as possibly coronary occlusion.

At the earliest possible moment, the patient should have a most thorough study, including every phase of his life. It is particularly urged that any stressful factor be determined and eliminated.[2] We must remember that attacks are most often precipitated by psychic stress, physical stress, filling the stomach or chilling the body, and particularly by a combination of two or more of the factors. The patient's life should be so regulated that he will live within the limits of his exercise tolerance.

A condition has been described as "angina pectoris during decubitus." It has been stated that this has been relieved by nitroglycerin and further attacks prevented by salt restriction and mercurial diuretics.[36]

PAROXYSMAL DYSPNOEA—These attacks are usually nocturnal, and are sometimes difficult to differentiate from asthma. In fact the term "cardiac asthma" has often been applied to this condition. The principal cause has been stated as hypertensive heart disease with left ventricular failure; other causes being syphilitic aortitis, coronary heart disease, and rheumatic heart disease.[30] We must remember in the first place that we are dealing with a diseased heart. Most of these cases will respond to a hypodermic of morphine and atropine, and a moderate dose of digitalis, such as 4 U.S.P. units of cedilanid intravenously. A maintenance dose of digitalis can usually be determined by a more or less gradual build-up, that will prevent the recurrence of these paroxysms. It is rather difficult to try to separate this condition from acute congestive failure, either in etiology or treatment.

CONGESTIVE FAILURE—In the average type of case, treatment is usually carried out somewhat as follows. Morphine ¼ grain is given intramuscularly. I believe that it is best to give atropine with this. Digitalis, of course, is the main stay of treatment. It is customary to give the first dose intravenously, usually about 4 to 6 U.S.P. units. If the patient is temporarily relieved and full digitalization does not seem urgent, capsules of the powdered leaf may then be given by mouth. Digitoxin is employed by many. Unless there is some contraindication, a mercurial diuretic is given, either mercuhydrin intramuscularly or theomerin subcutaneously. An intravenous injection of 50 per cent dextrose sometimes may be used to advantage. The patient should be kept quiet, free from friends, and to a large extent, from the family. Some member of the household should be warned of the possible dangers of the situation. If fibrillation is present, attention should be given primarily to the congestive failure. When that condition is under control, if the fibrillation still persists, the usual measures for its correction may be applied.[37]

ACUTE CORONARY INSUFFICIENCY — Several excellent papers on this condition have appeared within the past year. It is probable that most of these cases in the past have been diagnosed as coronary occlusion. As severe coronary insufficiency may lead to infarction, it is probably best to treat this condition as we would treat coronary occlusion.[38]. However, the period of treatment is of shorter duration, and a long term of disability is unnecessary if the patient progresses favorably.

CORONARY OCCLUSION — Extensive autopsy reports indicate that in many instances this condition occurs without symptoms, but pain is present in the majority of cases and may be of any degree of severity. It is often the symptom requiring most attention, especially in the beginning of treatment. Unless there are contraindications, morphine is given in sufficient dosage to maintain comfort. It must be remembered that continued pain imposes an additional burden on the heart. Most physicians prefer to give atropine with the morphine, at least for the first one or two doses. Alcohol is frequently used for the relief of pain. The custom is to use oxygen as a routine. Some advise using oxygen if there are evident indications such as cyanosis and dyspnoea. The upper part of the body should be carefully protected against chilling in an oxygen tent. Most of these patients recover or die without regard to what the physician does. For occasional patients, however, treatment may be life-saving.[39] The tendency is toward the routine use of anticoagulants and dicumerol is the agent of common choice. Semi-starvation is the rule for the beginning of treatment,[40] some giving the Karell diet for the first two or three days. A diet above a thousand calories is seldom recommended for use during the first ten days. When the patient is obese, a decided reduction in weight is desirable.

Absolute rest and quiet is necessary. There is an old understanding in medicine that the ideal plan is a month in bed in the hospital, a month at home in gradually resuming activity, and then a month out of the city in some quiet and comfortable place. The present tendency is to shorten these periods. It is certainly true that no set rule should be followed, for individualization is always necessary.

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PROGRAM

Biennial Meeting of Mississippi Chapter of the American Cancer Society

Jackson, Mississippi., February 7 and 8, 1951

9:00-10:00 a.m.: Board of Directors Open Meeting

11:00-12:00 a.m.: Film: Breast Self-Examination. Volunteer Clinic:

1. Dr. E. R. Nobles—Terminal Care
2. Mrs. Augustus Street—Loan Closets
3. Miss Mary Ann Elkin—Education

12:00-2:30 p.m.: Luncheon—Dr. Charles S. Cameron, speaker

3:30 p.m.: Dr. H. C. Nicholson—Research and Progress

Dr. Douglas Sprunt—Discussion and Questions

5:00-7:00 p.m.: Tea at Governor's Mansion

7:30 p.m.: Dinner—Senator John Culkin—Needed Legislation

February 8:

9:00-10:00 a.m.: Social Drama

10:00-10:30 a.m.: Questions and Answers

10:30-11:30 a.m.: Mr. Bagby Hall—County Organization for Campaign

Mr. Frank Kramer—Special Gifts

11:30 a.m.: Dr. Felix J. Underwood—Objectives for 1951

12:30-2:00 p.m.: Luncheon—Dr. Alton Ochsner and Dr. Guy Aud, speakers

2:00-3:00 p.m.: County Quotas

2:00- p.m.: Medical and Scientific Meeting—Central Tumor Clinic, Jackson, Miss.

COMMITTEE ON RURAL HEALTH

The American Medical Association, through its Committee on Rural Health, in cooperation with the national farm organizations, cordially invites doctors of the mid-South area to attend the sixth annual meeting of the National Conference on Rural Health to be held in Memphis, Tennessee, February 23-24, 1951. All of the sessions will be held in the Peabody Hotel.

The theme for this meeting is: "Why Wait—Let's Do It Ourselves." The program this year is built around the planning and organization of health councils. This community council, if properly organized, with broad interests, wide popular support, and wise leadership, can supply the channel through which any community can solve its own health problems, in its own way and to its own satisfaction.

ONLY RESERVES, MILITARY OFFICERS AND MEN OVER 50 EXEMPTED FROM REGISTRATION

On January 15, the following groups of physicians must register with their local Selective Service boards: Men ". . . who have not reached their **fiftieth** birthday, except members of the **regular or reserve components** of the uniformed services and certain categories of **aliens** . . . unless they are registered under the October 16, 1950, registration."

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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Editorials

LOOKING FORWARD

Last year was not a bad one for the march of medicine. It brought us many more hospital beds and more medical service to the people of our state. Public health service held its high efficiency standard. Jackson, Vicksburg, Meridian, Hattiesburg, and Greenville made significant strides in medical service and over the entire state the medical profession manifested alertness. Many small town and rural communities still lack as many doctors as they need, but hospital insurance and increased hospital facilities are bringing more patients to the hospital for treatment, and doctors are seeing more patients this way.

On the national level the American Medical Association is becoming better acquainted with medical problems out in the rural areas. However, the problem of socialized medicine is not settled by any means. It continues to challenge us to self-analysis. It is not enough to do good medicine in even every field of specialization. There must be a determined effort to build an adequate citizenship, the doctor entering into the pleasures and joys and sympathies of the people. Medical service must be served in a more palatable form perhaps. Dr. Hamilton McKay, past-president of the Southern Medical Association, cites the profession to its poor public relations and lays a lot of the blame at the door of our medical schools. He is probably striking at one of the key problems. The service rendered the people by the doctor along with a sincere interest in every phase of human life is worth more than money to ward off state medicine.

MARCH OF DIMES

January brings us the March of Dimes for research and treatment of polio. Last year Mississippi had its greatest number of cases. The disease seems to be on the increase, the cause still unknown. We must continue to do research until we can conquer this most tragic disease. Modern treatment is doing much for polio cases, much to save their lives and much to restore them to usefulness. Dr. Felix Underwood, chairman of the March of Dimes drive, has done a fine job for several years. We gratefully continue our support. The hospital at Vicksburg has rendered excellent service to the state in treating the cases. From the National Foundation thousands of dollars have come to our state to help our unfortunate victims.

The medical profession can do much to augment the dimes given in this current drive. No other disease seems to strike at the parent's heart as does infantile paralysis. Everything known to do for these cases should be invested.

Dr. J. H. Green of Tupelo received his fifty-year certificate and pin at the last quarterly meeting of the Northeast Mississippi Medical Society at Tupelo and the same was delivered to Dr. O. P. Stone of Ripley, posthumously, for Dr. J. H. Stone of Tremont. Dr. J. O. Slaughter, chairman of the Commission on Hospital Care, delivered the address paying tribute to the Fifty-Year Club in general and these two men in particular. It was very fine.

You will note the meeting of the Biennial Cancer meeting in Jackson, February 7 and

8. This is a splendid program and should be well attended. Cancer claims the life of about 200,000 of our citizens each year. The exact cause and the entire story of the treatment are as yet still unknown. The conquest of cancer is perhaps medicine's biggest challenge. We know enough about the treatment of cancer now to save a thousand people per week if we would only do as well as we know. Surgery, radium and x-ray will cure about fifty per cent if the diagnosis is made early enough and these measures properly applied.

While we search for the real cause and cure of cancer we must not fail to utilize what we already know. The laity must be better educated and doctors and nurses must at all times be on the alert. The educational campaign last year in this state was unusually good, Drs. Gamble and Parsons being largely responsible for this. It was a course given over the state teaching the doctors the essentials and the practical things about cancer. It is not so much what the doctor does not know as a rule, but what he does not do that loses so many victories. Eternal effort must be the price of victory over cancer.

BOOK REVIEWS

When Minds Go Wrong, by John Maurice Grimes, M.D., published and distributed by the author, 5209 S. Harper Avenue, Chicago 15, Ill. 237 pp. Price $5.00.

This extraordinary story of the mentally ill, past, present, and future, is written under inner compulsion by a psychiatrist of twenty years' experience, who also served four years as a staff-member of the Council on Medical Education and Hospitals of the American Medical Association. He is the author of one other book on mental patients, "Institutional Care of Mental Patients in the United States."

One might expect from the foregoing that this book is luridly sensational, bent on grinding an axe with political import, or mercenary prospect. It is an amazing story, but told with deep pathos and understanding, intent upon bringing an enlightening contribution to the literature on mental patient care, and specifically to hasten the day when hospitals, erstwhile asylums, actually become hospitals-in-name to minister to, salvage and reclaim an alarmingly vast number of those classed as mentally ill.

With the earnestness and fervor of a crusader Dr. Grimes offered this book by personal mail to psychiatrists and neuropsychiatrists during the month of December. It is now available to persons in all related work, political and educational leaders, libraries, etc.

The author's story and argument can not be ignored by the profession or individual who seeks to help make life more abundant. He strikes at the heart of a neglect which is wasteful in human life, and uselessly costly to the taxpayer. It is an indictment against our backwardness in demanding more sane institutional care. But Dr. Grimes does not end his story with the charge; he gives an answer: Provide a place when these patients can live together in an environment where the battle of life is not too hard for them, and with care rather than custody, the citizens of a dream village health center may be returned to usefulness.

When Minds Go Wrong is a challenge.

The Physiology of Thought, by Harold Bailey, M.D., F.A.C.S., Kansas City, Mo. Published by the William-Frederick Press, New York, price $3.75. 313 pp.

Dr. Bailey chose a little explored realm, the mind, to devote the 313 pages of this highly engrossing book. And he presents his subject from a personal consideration of his own ideas and experimentation. He is direct, lucid, and plausible in his deductions. The book might well serve as a textbook for the student, a study for the man in general practice, or an excellent aid to the psychiatrist.

Thought as it is related to the nervous system, the special senses, memories, habits, instincts, dreams, emotions, and then the problems of pathology construct the subject with amazing clarity and persuasion. In the end Dr. Bailey says, "Whether or not we regard life and consciousness as one and the same thing, we must all agree that they do act very much alike, and both are obviously products of function. It is our belief that they are products of the same function, the function of thought."

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STATE BOARD OF HEALTH

FELIX J. UNDERWOOD, M.D.

POLICY, PROCEDURE, AND REQUIREMENTS FOR FLUORIDATION OF PUBLIC WATER SUPPLIES

In accordance with the responsibility of the Mississippi State Board of Health to supervise the health interests of the people, the following special regulations relating to the Fluoridation of Public Water Supplies have been officially adopted by the State Board of Health on this the eleventh day of December, 1950:

Policy:

In any community where a demand has developed for the addition of fluoride to the public water supply and the plan has the approval of the local medical and dental societies and the local health officer, and the local municipal officials will enact an ordinance authorizing the fluoridation of the water supply, the Mississippi State Board of Health will approve the addition of fluoride to the water supply where the necessary equipment and technical supervision are available.

Prior to approval, the Division of Sanitary Engineering will determine the adequacy of the equipment and technical supervision proposed, and engineers of the Division will advise local officials concerning details of the treatment and laboratory control procedures required.

The addition of fluoride to a public water supply is prohibited until approval in writing has been obtained from the State Board of Health.

Procedure for Obtaining Approval:

1. Written approval or recommendation shall be submitted to the State Board of Health from the local medical and dental societies. In small communities where no such societies exist, the written approval or recommendation of a majority of the local practicing physicians and dentists will suffice.

2. The written approval or recommendation of the local health officer shall be submitted.

3. The local officials of the community shall authorize, by passage of a suitable ordinance, the fluoridation of the water supply, a certified copy of which shall be submitted to the State Board of Health.

4. The legal counsel of the municipality or water company will submit evidence that all necessary authorization has been given to the water department or water utility so that legal liability for damages will be limited to negligence.

5. Detail plans and specifications shall be submitted covering the equipment and equipment installation for the addition of fluoride. These shall include an installation plan showing the location of the equipment, the point of application of the fluoride, and shortage facilities for stock chemicals.

General Requirements for Approval:

1. Reliable feeding equipment with an accuracy within 5% shall be provided to feed the desired dosage of fluoride. The rate of feed shall be such as to give a fluoride content of 1.0 p.p.m. to 1.2 p.p.m. in the treated water. The point of application of the chemical will be selected so that the fluoride will be evenly mixed with the water before being discharged into the distribution system.

2. If solution feed equipment is to be used, at least two solution tanks and accurate means for weighing the stock chemical and measuring the water for solution shall be provided.

3. Special precautions shall be taken to protect the operators from inhaling the stock chemical. These precautions will vary with the type of installation, but the minimum will be the provision of a toxic-dust respirator for each operator involved which shall be worn when handling the stock chemical.

4. Locked separate storage facilities for the fluoride chemical shall be provided.

5. Suitable placards shall be posted in one or more places in the water works plant warning operators of the hazards of careless handling of the fluoride chemicals, and of the necessity for continuous and accurate feeding of the chemical to the water supply.

6. Suitable equipment shall be provided to enable the operator to make determinations of the fluoride concentration in the treated water. Samples of water shall be collected daily from the plant effluent and once a week from a selected point on the distribution system, on which a fluoride determination shall be made. The results of these tests shall be recorded on

forms supplied by the Mississippi State Board of Health and submitted to the Board on or before the tenth day of the following month.

7. Samples of water collected from a point on the distribution system shall be submitted to the State Hygienic Laboratory for fluoride determination at weekly intervals for the first month of operation. Subsequently, such check determinations shall be made at two-month intervals. All laboratory procedures for fluoride determinations shall be in accordance with the procedure outlined in the latest edition of **Standard Methods for the Examination of Water and Sewage.** (N. Y., Amer. Pub. Health Assn., 9th ed., 1946.)

* * *

The above policy relating to fluoridation of water supplies has been sent to the directors of all county health departments of Mississippi, accompanied by the following letter from Mr. H. A. Kroeze, Director of the Division of Sanitary Engineering:

> A definite interest relative to the application of fluorides to public water supplies has developed in a number of communities in the state. Since the application of this chemical to a water supply, if improperly handled, could produce some danger to the consuming public and the water works operators, as well as fail to produce the desired results with reference to the preventing of dental decay, it was felt that the State Board of Health should set up a definite policy governing this matter. Enclosed is a copy of the policy, together with the regulations governing the application of fluorides to public water supplies, adopted by the State Board of Health at the meeting December 11, 1950.
>
> As this subject has already been discussed in a number of communities, and inquiries have come to some of the county health departments, we hope that you and all your staff will review this statement of policy. Should the officials of any community in your jurisdiction become interested in the fluoridation of their public water supply, the Division of Sanitary Engineering should be contacted for a full discussion of the problem as it relates to the particular water supply involved.

(s)
H. A. Kroeze
Division
Division of Sanitary Engineering

DEATHS

DR. LEON S. LIPPINCOTT

Dr. Leon S. Lippincott, who for a number of years was pathologist at the Vicksburg Sanitarium, now the Mercy Hospital, died suddenly at his home on the morning of November 25 in Daytona Beach, Fla.

Death was attributed to a heart attack.

Dr. Lippincott served during World War I in Europe with the rank of major. Shortly after the close of the war in 1918 he came to Vicksburg and accepted a position at the Sanitarium. He left Vicksburg in the early thirties.

During his residence in Vicksburg, Dr. Lippincott was prominent in civic affairs. He was a Mason, and took an interest in the activities of the local lodge.

Besides his wife, he is survived by a daughter, a son and a sister.

A graduate of Bowdoin Medical School, Brunswick, Maine, he began the practice of medicine in 1913.

Dr. Lippincott was for several years historian of the Mississippi State Medical Association and was very active in organized medicine during his residence in the state.

DR. E. S. BRAMLETT

Dr. Eugene S. Bramlett, for 46 years a practicing physician in Lafayette County, died December 11 of the effects of a stroke he suffered on December 7. He was 70.

Dr. Bramlett received his medical degree from Kentucky University, Louisville, Ky., in 1905. He was granted his license to practice in Mississippi the preceding year.

DR. B. T. ORENDORF

Services for Dr. Bell Taylor Orendorf, well known Natchez physician who died in Jackson December 6 were held from his late residence December 7, with Rev. J. Walton Stewart, Jr., pastor of the First Presbyterian Church officiating.

Dr. Orendorf was born on April 4, 1884, in Rolling Fork, but had made his home in Natchez for the past 25 years.

He was a graduate of the Kentucky School of Medicine, class of 1907.

Survivors include his wife, Mrs. Lenora Montgomery Orendorf and three sisters, Mrs. L. M. Elliott and Miss Goldie Orendorf, of Rolling Fork and Mrs. Jessie Carey, of Ohio.

DR. O. O. AUSTIN

Dr. Orrin Oscar Austin, 66, Harpersville physician, died December 27 in his sleep.

He began his practice of medicine in Scott County in 1919 and practiced there all of his life. He was a veteran of World War I and was a member of the Masonic Lodge and of the Methodist church.

Dr. Austin had not been ill and had never missed a day's work.

Survivors are his wife, Mrs. Mae Robbins Austin, Harpersville; three sons, Orrin L. Austin, Jackson, Dr. Duff Austin, Clarksdale, John Austin, Jackson; one sister, Mrs. W. C. Eastland, Doddsville, four grandchildren.

A Discussion of Cortisone and ACTH*

CHARLES T. BERRY, M.D.
Greenville, Miss.

OUR interest in cortisone was stimulated originally by attending the first clinical conference on cortisone held in July, 1950, at Birmingham, Alabama, under the joint direction of Dr. Tom Spies of that city and Dr. J. M. Carlisle, medical director of Merck and Company. The meeting was most interesting and instructive.

Historically, cortisone, the adrenal cortex hormone originally named Compound E, was first isolated from beef adrenal glands by Dr. E. R. Kendall and associates of the Mayo Foundation. Incidentally, Dr. Kendall recently received the Nobel prize for his work on cortisone.

Cortone, the Merck trade name for their brand of cortisone, was first synthetized in the research laboratory of Merck and Company in 1946 by Dr. L. H. Saret. The Merck and Mayo groups working together are responsible for the production of cortone acetate in amounts available for clinical use.

ACTH, the pituitary hormone or adrenocorticotropin was first prepared by the Armour Laboratories and was derived from pork—pituitary glands by an isoelectric precipitation method. Cortone and ACTH are now available in sufficient quantities for clinical use and can be procured through regular drug channels as of November 1, 1950, without further restrictions other than the excessive cost. Like all newly developed drugs the cost is prohibitive but is coming down rapidly and we believe will soon be in the reach of the pocketbook of the average patient. The present price of $35.00 to $40.00 a gram for cortisone is a far cry from the original price of only a few months ago of $200.00 a gram. The price of ACTH is comparable to that of cortone.

In this discussion no attempt will be made to delve deeply into the physiology and action of cortone and ACTH. Suffice it to say in attempting to define the action of these hormones that in simple terms: ACTH, the pituitary hormone, stimulates the adrenal gland to increase its production of cortisone and cortisone-like compounds, while the use of cortisone is really replacement therapy of additional adrenal cortex hormone. No claim of a cure or a specific is made for either ACTH or cortisone as it can be shown easily that their actions are reversible. This has been proved both experimentally and by observation of patients following discontinuance of the drug.

We shall not attempt to compare the relative merits of ACTH and cortisone as our personal experience with ACTH is nil. In general, comparable results will be obtained. Dr. Spies stated his results were identical when the drugs were indicated. Of course, in a patient with a sub-functioning adrenal cortex, as in Addison's disease, only cortisone would be indicated and ACTH would be of little or no value. From the literature, **at least at present,** one gains the impression that cortisone is considered an easier drug to handle as far as dosage is concerned, that there are less side effects. However, in general as stated above, results in clinical use are about equal. Before ACTH is used the capacity of the adrenal cortex to react to stimulation should be determined. This is done by the Thorne test. This test is made by injecting 25 mgm. of ACTH and several hours later if the adrenal cortex is normal or capable of activation a fall in the circulating eosinophiles of the blood can be determined. Also with a normal response to ACTH stimulation, a rise in urinary secretion of 17 ketosteroids and 11, 17 oxysteroids will be shown.

In rheumatoid arthritis—the results are usually beneficial and often dramatic. Subjective stiffness is first to disappear within hours or a few days followed by diminution in pain and swelling and then the return of muscle strength. The earlier and more acute the symptoms the better and more dramatic the results but in all cases of rheumatoid arthritis, even the burned-out old cases with ankylosis, destructive changes in cartilage, bone, ligaments, etc., usually get appreciable relief.

In the past three months I have treated some twenty-five cases of rheumatoid arthritis including acute, subacute and chronic cases, mild and severe, including one far advanced case of the ankylosing Marie Strumpell type. In all these cases the one thing that impressed me most was the relief of pain given these patients by cortone injections, after that the increased joint motion, decreased muscle stiffness, increased strength and sense of well being, increased appetite and mental euphoria. I do not know whether the euphoria in these cases is due to the cortisone or to the fact that the patients are so happy to get relief from pain and to feel somewhat normal again. I imagine it is due to a little of both. These patients have not been observed over a long enough period to report on thoroughly. No cure is expected. A few have been observed to partially relapse two to three weeks after discontinuance of treatment. More are still holding their own and enjoying the benefits of cortisone therapy after several months and some are under treatment at the present time.

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*From the Gamble Brothers and Archer Clinic, Greenville, Miss.

The optimum dosage of cortisone in rheumatoid arthritis has not been definitely and finally worked out. It will vary with each case. We have employed the following schedule from which we vary whenever we please:

100 mgm. B.i.d. x 4 - 5 days
100 mgm. O.D. x 7 - 10 days
50 mgm. daily x 15 days
50 mgm. every other day x 15 days

This dosage is stepped up or down depending on the patient's response, and an effort is made to find his proper maintenance dose. A series of treatments usually lasts from four to six weeks and in the usual arthritic case a maximum of four grams is given in any one series of treatments. As yet we have had no repeaters but we expect to and I also expect that cortisone will again bring them relief from symptoms.

Cortisone has been quite effective in three cases of severe penicillin rashes, generalized, clearing them up completely in three days with a dosage of 100 mgm. b.i.d. using only ½ gram cortone in each case. Conversely one other penicillin rash with arthritic pain as well in ankles, knees, wrists, and elbows showed no response whatsoever after being given one full gram over a period of four days. One patient with a chronic dermatitis from sensitivity to arsenic (carbarsone capsules) who had been suffering for two years was completely cleared up and symptom-free in one week with a dosage of 100 mgm. b.i.d. x 3 and o.d. x 4 days. The result in this case was most gratifying. She has been observed for one month with no return of symptoms. One case of dermatitis—vena nata, cleared up completely with only three injections of 100 mgm. of cortone. One case of pityriasis rosea, severe, was apparently 75 per cent cured in one week with 1 gram cortisone.

Although there are definite undesirable side effects known to occur in treatment of patients with cortisone they have been conspicuous in this small series by their absence. In only one case has treatment been discontinued, this after injection of 2½ grams of cortisone in an elderly lady with chronic severe ankylosing arthritis. This patient had been a semi-invalid for years. Her response was excellent. She got 75 per cent relief from pain, was able to walk about her house for the first time in years and appetite was much improved. However, in the third week of treatment she gradually developed a marked rounding of the face, the so-called "moon face," and began rapidly to put on weight, gaining 19 pounds in three weeks. However, this patient only weighed 83 pounds at the beginning of her treatment. She showed evidence of minimal pitting edema of the extremities but no evidence of any gross edema elsewhere. During the third week she began to complain of weakness and asthenia and the drug was discontinued temporarily.

In the usual case, because of the temporary suppression of the adrenal cortex by replacement cortisone therapy it is advisable when contemplating the discontinuance of treatment to step down the dose gradually instead of stopping the treatment abruptly, thus allowing the adrenal cortex a chance to begin its normal activity. As experience teaches us it begins to seem that the best dosage method is to give large doses initially to suppress symptoms and as soon as this is accomplished to find by trial and error the smallest daily maintenance dose which will control symptoms. In the very near future it is expected that cortisone will be available in pill form for dosage by mouth and this may change somewhat the conception of dosage. The dosage in children should be proportionally large and approximately somewhat that of adults depending more on the severity of disease than the size of the child. It has already been proved that cortisone by mouth is effective clinically.

When cortisone is given in full dosage salt and water retention must be guarded against. Usually there is only a minimal gain in weight and rarely any gross edema. Daily weighing of the patient is important and all patients are kept on a low sodium diet. Measurement of daily fluid intake and output is important in suspected cases of salt and water retention.

With marked retention diuretics would be indicated.

Cortisone also tends to cause excess excretion of potassium. Should hypopotassemia occur it would first be evident by muscular weakness, asthenia, alkalosis and electrocardiograph changes. Hypo-potassemia could be determined by blood determination but this is very difficult and expensive. A blood chloride and CO_2 combining power can be used as a substitute. In hypo-potassemia the blood chlorides will be low and the CO_2 combining power up over normal. If this condition develops 2 to 4 gm. of K.C.L. daily is indicated· I have seen only one case in which hypo-potassemia was suspected. Cortisone was temporarily discontinued and no further treatment was necessary. All patients under cortone therapy are asked to eat a baked potato daily as this is a good source of potassium.

Cortisone has a marked anti-insulin effect and it is contraindicated in severe diabetes. In milder diabetes the blood sugar must be closely watched and the amount of insulin needed will be roughly twice as much. In non-diabetics cortisone may induce glycosuria or hyperglycemia. A routine blood sugar and urine should be taken on all patients prior to taking cortisone and repeated if hyperglycemia is suspected.

Patients taking cortisone develop a mild euphoria. This has in our small series been considered only a healthy sign of improvement· The literature reports occasional cases of patients on large and lengthy doses of cortisone developing severe mental depression and of patients with tendency to schizophrenia, for example, being thrown into a psychotic state. These are the marked exceptions and the mental response in the average case under treatment is a healthy one and not to be feared.

Protein metabolism may be affected in those patients receiving high and continued dosage of cortisone producing a negative nitrogen balance. Creatinuria may occur and uric acid excretion increased and changes in pattern of excretion of amino acid excretion. An increase in the amount of food intake and decrease in dosage will correct this condition should it occur.

Undesirable side effects of cortisone and evidences of overdosage have been reported as such evidences as "rounding of the face or moon face, mild hirsutism, acne, striae of the skin, amenorrhea, insomnia, muscular weakness, increased pigmentation." All these symp-

PRELIMINARY GROUPING OF DISEASES ON THE BASIS OF RESPONSE TO ACTH AND CORTISONE THERAPY

Diseases in Which Drugs Are Most Useful

Addison's disease (Cortisone only)
Panhypopituitarism
Functional adrenocortical insufficiency
Functional hypopituitarism
Rheumatoid arthritis
Anorexia nervosa
Idiopathic hypoglycemia
Acute rheumatic fever
Acute gouty arthritis
Status asthmaticus
Serum sickness
Exfoliative dermatitis
Loeffler's syndrome
Acute inflammatory disease of eye

Diseases in Which Drugs May Be Useful

Psoriasis
Disseminated lupus erythematosus
Dermatomyositis
Periarteritis nodosa
Acquired hemolytic jaundice
Vasomotor rhinitis
Urticaria
Multiple myeloma
Lymphoma
Leukemia
Nephrotic syndrome
Ulcerative colitis
Regional enteritis
Pulmonary beryllosis

Diseases in Which Drugs Are Of Questionable Value

Mental disease
Multiple sclerosis
Pemphigus
Scleroderma
Myasthenia gravis
Osteoarthritis
Paget's disease
Tuberculosis
Pneumonia
Anoxia
Pernicious Anemia
Liver disease
Thyrotoxicosis
Malignant exophthalmos
Glomerulonephritis
Cancer
Hypertension (Cortisone)

Diseases in Which Drugs Are of No Value

Herpes simplex
Herpes zoster and varicella
Poliomyelitis
Progressive muscular dystrophy
Progressive muscular atrophy
Cystic fibrosis of pancreas
Peptic ulcer
Sarcoidosis

Diseases in Which Drugs May Be Detrimental

Diabetes mellitus
Cushing's syndrome
Hypertension (ACTHO)
Congestive heart failure
Osteoporosis
Acne
Hirsutism

toms are reversible and disappear after discontinuance therapy. In our small series of cases only rounding of the face and minimal edema were noted. No effects on blood pressure were noted at any time during treatment of any case.

Laboratory Findings in Cortisone Therapy

The sedimentation rate will be decreased sometimes rapidly to normal but sedimentation rate cannot be used as an index to the benefit the patient is receiving from therapy.

Hemoglobin values and erythrocytes when below normal tend to increase.

Low serum protein and reversed albumin globulin ratios tend to return to normal. No effect of circulating leukocytes is noted.

Hench reports dramatic improvement in acute rheumatic fever treated with cortisone 200 mgm. daily for several days, thus 100 mgm. daily for two to three weeks. He reports clinical improvement is two days, normal sedimentation rate is ten to twenty days. Massel reports excellent results with smaller quantities of ACTH forty mgm. daily in ten patients. In two cases heart murmurs cleared up promptly. Report case seen at Birmingham.

Hellman reports excellent results in acute gouty arthritis with 50 mgm. of ACTH every hours for only three doses. He also uses colchicine in conjunction with ACTH.

With severe asthma cases Bradley reports excellent results with use of 25 mgm. ACTH every six hours for eleven to twelve days with relief usually in from two to seven days and lasting up to four weeks when symptoms gradually returned.

According to Harvey, ACTH and cortisone are effective in causing remission of acute disseminated lupus erythematosis, improving the fever and the rash, improvement lasting from two to four months but the final course of the disease depends on the permanent damage to the cardiac and renal systems or to the brain. Except in early cases of dermatomyositis treated vigorously, no lasting benefits appear likely from ACTH or cortisone. Stellman and Boles report five cases of periarteritis nodosa treated three with cortisone and two with ACTH which showed marked improvement as far as relief of fever, subjective symptoms and return to normal of the sedimentation rate. However, it is their opinion that although cortisone or ACTH can inhibit the acute process of periarteritis nodosa, fibrous obliteration of vessels may continue unabated and that permanent remissions remain to be demonstrated.

Gardner reports marked hematogenous improvement in two cases of acquired hemolytic jaundice from 60 to 100 mgm. a day of ACTH for approximately two weeks. Randolph and Rollins have reported marked improvement from ACTH in vasomotor rhinitis, dosage 10 mgm. every 6 hours for ten days.

Pearson failed to find any benefit in a patient with multiple myeloma with ACTH and cortisone. In general it may be said as far as the leukemias are concerned ACTH and cortisone may effect transitory remissions but offer no hope of a permanent cure.

Inflammatory eye diseases as acute iritis, acute keratitis, acute uveitis, acute choroiditis, optic neuritis, sympathetic ophthalmia, acute secondary glaucoma and conjunctivitis, respond well to cortisone and ACTH therapy. Some can be treated successfully by local application of a cortisone saline suspension. Farnsworth reports two cases of nephrosis with chronic nephritis treated with ACTH which showed no permanent beneficial results.

Bauer and Randolph report very good results from ACTH in three cases of ulcerative colitis, 100 mgm. daily for thirty-six days. Two months after discontinuance of treatment all three patients were eating a normal diet, having normal formed stools and no evidence of a return of the ulcerative colitis could be shown by proctoscopic or x-ray examination.

Ashwood demonstrated marked improvement in four patients with regional enteritis treated with ACTH 20 mgm. every six hours for ten to twenty days.

Thorne states that in the following diseases, ACTH and cortisone are of doubtful value. Symptoms in myasthenia gravis are made worse during therapy but are subsequently improved following discontinuance of the drug. The value in tuberculosis is questionable. Three patients treated with ACTH clinically seemed markedly improved but on discontinuance of the drug there was an exacerbation of the disease with a definite spread of the tuberculosis. ACTH and cortisone seem to speed recovery in acute alcoholism and delirium tremens. These drugs seem to be of no help in relieving drug addiction as codeine or morphine. ACTH and cortisone in multiple sclerosis according to Merit showed no beneficial effects. Thorne reports ACTH and cortisone appear to be of benefit in pemphigus.

The progression of skin lesions was halted and epithelization was stimulated.

Boyles reports four cases of scleroderma treated with cortisone showing that cortisone is capable of inducing transient amelioration of signs and symptoms of scleroderma but does not alter the fundamental course of the disease.

Paget's disease does not seem to be benefited according to Albright. Finland reports dramatic improvement of a case of lobar pneumonia on the third day after ACTH therapy and this author also reports favorable response in primary atypical pneumonia. In all the diseases in which ACTH and cortisone seem to be of benefit it appears that the adrenal steroids either inhibit the allergic reactions or interfere with tissue reactions to invading organism. Gardner reports in cases of pernicious anemia and aplastic anemia that ACTH and cortisone are not capable of inducing bone marrow regeneration.

Thorne believes that ACTH and cortisone will be of benefit in liver disease mainly by increasing appetite, enabling these patients to eat a high calorie nutritious diet.

After studying eight patients with **Graves'** disease, Thorne could see no advantage with ACTH or cortisone over present methods of therapy. Thorne believes also from his experiences that at present ACTH and cortisone have no place in the treatment of acute and chronic nephritis.

The reports on use of ACTH and cortisone in different types of carcinoma and other types of cancer are not conclusive. It appears that these hormones are able to reduce markedly the tissue reaction to the cancerous material and thus to effect the symptoms of the disease, although they may exert little or no benefit on the carcinoma itself. No effects on hypertension have been noted from cortisone therapy. Some cases treated with ACTH have shown a transient rise in blood pressure while under treatment.

It is quite evident that no definite conclusions can be drawn on the true efficacy at present of ACTH and cortisone. The fly in the ointment so to speak lies in the fact as one reads in the literature these preliminary reports—that all too often the beneficial results are transitory. The question of adequate dosage is wide open and to some extent seems to vary markedly with the individual. The danger of the indiscriminate use of these hormones may lie in the fact that the adrenal cortex could possibly become inactivated by continued and prolonged stimulation by ACTH or by continued replacement therapy by cortisone. However, to date there has been no case of suppression of the adrenal gland which has not been proved to be reversible and to return to normal function following discontinuance of therapy. The longest continuance case of treatment we could find recorded in the literature was five months in which time the patient was given over 11 grams of cortone. We have given one case of early Hodgkins' seven grams over a period of three months and after contacting the medical director of Merck and Company we are planning to continue 50 to 75 mgm. daily unless this patient develops signs and symptoms of overdosage. So far he has developed one new neck gland. A second case with diagnosis of lymphona, generalized, has improved markedly under cortisone. The glands have decreased in size and are no longer painful. The patient's blood count returned to normal and her general condition showed remarkable improvement, a marked increase in strength and a sense of well being. One case of rheumatic pericarditis, age ten, in which it so happened that cortone was not started until the patient was over her acute phase, had a marked pericardial friction rub. In ten days with 50 mgm. Cortone b.i.d. for four days and 50 mg. o.d. daily thereafter the friction rub disappeared from all areas of the heart.

In conclusion it seems evident that the use of ACTH and cortisone as substitution therapy will do much good in patients with specific endocrine deficiencies. But of more general interest the adrenal steroids seem capable of interfering in the sensitivity of body cells to bacterial and non-bacterial substances, apparently being of great help in allaying allergic reactions. In the past diseases based on altered tissue activity have been largely inaccessible to treatment. Yet it is in such diseases that cortisone and ACTH bring about their greatest benefit.

Even though these hormones may not live up to their early promise, their discovery will stimulate further research along the hormone pathways for the discovery of ACTH and cortisone has opened up a new field of medicine.

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The Acute Abdomen—A Diagnosis Emergency*

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DURING a tight baseball game, that famous pitcher, Walter Johnson, sent his fast one over for the third strike. The batter walked dejectedly toward his bench saying "You can't hit 'em if you can't see 'em." This can be paraphrased in medicine to "You can't treat 'em if you can't diagnose 'em." Diagnosis always has and always will be the keystone of medical practice. The acute abdomen is the general surgeon's home—also his dog house. A good diagnosis, home and happiness, a missed diagnosis, dog house and embarrassment.

From the time you receive the call to see someone with an acute abdominal complaint you begin, maybe subconsciously, to do mental gymnastics, trying to follow all the stunts an abdomen can do. You cover all the bars and hurdles—appendicitis, cholecystitis, cystitis, pancreatitis, ulcer, perforated ulcer, the acute obstructions and colics, crises of tabes, heart disease, diseases of the mesentery and vascular system and on and on and on.

The acute abdomen, or as so often rightly called the abdominal emergency, must not only be correctly diagnosed but must be correctly diagnosed early. A few hours may mean the difference between life or death or to be more charitable, the difference between a few days and weeks or months of illness. In other words the recovery rate is directly proportional to the earliness of diagnosis and treatment. And don't worry about the treatment. If it is something you can't handle you can find someone who can. But it is up to you—the first man to see the case, to make the diagnosis or at least a tentative diagnosis.

In a very able discussion of the subject of the acute abdomen, Dr. Phil Thorek, of Cook County Graduate School of Medicine, Chicago, reviewed the surgical admissions to the American and Cook County Hospitals for the past 5 years. He said that to his surprise he did not find 50 or 75 conditions that were confusing but rather 6 outstanding ones that were mistaken most frequently. He named them as acute appendicitis, acute gall bladder disease, perforated peptic ulcer, renal colic, acute pancreatitis and coronary occlusion. He mentioned as a possible seventh condition salpingitis. However, I think that maybe because of our large colored population, we are better acquainted with salpingitis than he. Therefore I think that intestinal obstruction should be our seventh.

The approach to a diagnosis has not changed from that taught in the old textbooks—history, past and present, physical and laboratory. However, it can be helped a bit by doing a little mental grouping, realizing of course that we are thinking in generalities.

1) According to age we find
   In infancy and childhood:
      Congenital defects, pyloric stenosis, intussusception
   Young adults:
      Appendicitis
   Middle age:
      Gallbladder disease, peptic ulcer, renal colic, mechanical obstructions, pancreatitis and coronary disease
   Upper age:
      Malignancies and organic obstruction
2) According to sex
   Males—more prone to peptic ulcer, hernia, renal colic and cancer of intestinal tract.
   Females—to gallbladder disease, pancreatitis, pelvic conditions, and mechanical obstructions from previous surgery.
3) Attitude of patient
   Rigidity still—colics and peritonitis
   Restless—cholecystitis, pancreatitis, coronary disease
4) Muscle tone
   Rigid—peritonitis

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Protective spasm—pathology of underlying organ
Distention—late peritonitis or obstruction

5) Pain
   Localized over involved organ
   Intermittent—colics and obstruction
   Steady—inflammations and neoplasms
6) Referred Pain
   To shoulder—from irritation of diaphragm
      Peritonitis—infective or irritative, perforated peptic ulcer, hepatic abscess with peritonitis over it, spreading infections from gallbladder, appendix or salpingitis. Ruptured ectopic pregnancy.
   Subscapular
      Right—liver and gallbladder
      Left—stomach
   Flanks—kidney and pancreas

ACUTE APPENDICITIS

Again we might paraphrase an old saying, "A snake in the grass" and call it a snake in the abdomen. It is really more treacherous and has been missed by the most careful diagnosticians. The patient, usually a young adult of either sex, almost invariably will start by telling of having eaten something that he knows disagreed with him. However, he has eaten the same thing many times before without ill effects. This self-made diagnosis should be put aside, at least temporarily, while we consider the usual order of symptoms—pain, vomiting, localized tenderness and fever. The initial pain is usually mild to moderate in intensity and felt in the epigastrium, the umbilical region or generalized and affecting no particular area. A few hours later we get the nausea and vomiting. Here it is well to remember that anorexia, nausea and vomiting are all grades of the same symptom. On questioning you will find that a good percentage of patients with acute appendicitis will tell you that they didn't feel like eating the previous meal or two, even though they do not complain of actual nausea or vomiting.

About 12 to 24 hours after the initial epigastric, umbilical or generalized distress, it will localize as a tenderness or soreness in the lower right quadrant.

In early appendicitis the temperature may be normal and after several hours it may rise only a fraction of a degree. When you suspect an appendix and find a temperature of 102 degrees-103 degrees you better be equally suspicious of peritoneal involvement.

Leukocytosis and muscle rigidity were purposely omitted from the usual sequence of symptoms. The white count, even with a differential and Schilling is none too reliable. If it is 10,000 to 15,000 with increased ratio of polys and a shift to the left, you feel better because it fits in with your diagnosis. However, it is 8,000 to 10,000 to 20,000 to 40,000, it neither confirms nor rules out appendicitis and only makes the diagnosis harder. I remember one case in particular, a boy age 11, sick only about 12 hours. Nothing of importance in the past history. Only moderate tenderness over the appendiceal area and no other abdominal findings. His temperature was 103 degrees and his white count 42,000 with 85 per cent polys. I spent a couple of miserable hours trying to convince myself that my diagnosis of appendicitis just couldn't be. I could find nothing else, operated and removed a hot appendix with only minimal localized peritonitis.

Muscle rigidity was omitted too. I feel that if this had never been written in the old textbooks our mortality rate in appendicitis would not be as high as it is today. The inexperienced put too much importance in this fancied finding. I am sure that very few of you have ever found an actually rigid muscle over an inflamed appendix. Protective muscle contraction might be a better term but this usually means a voluntary act. Muscle resistance in varying degrees is more descriptive and even that is not always present.

In your diagnosis of appendicitis if you will consider pain—epigastric, umbilical or generalized followed by anorexia, nausea or vomiting and then localized tenderness, you will be right in better than 95 per cent of cases.

ACUTE CHOLECYSTIC DISEASE

This is usually a result of chronic inflammation of the gall bladder and such a history can usually be obtained by careful questioning. No attempt will be made here to differentiate the previous attacks as to whether they were cholecystitis or cholelithiasis because both give practically the same symptoms, stones are found in 90 to 95 per cent of chronically infected gall bladders and both can give rise to acute cholecystitis.

Fair, fat and forty as we were taught, and to which has been added fertile and flatulent, pretty well describes the patient with disease of the biliary tract.

An overweight multiparous female of forty complains of excessive gas. Of course we know that a person of either sex, any age and any stature may have gall bladder disease. However, these are the exceptions and not in the majority.

As mentioned, the history will usually reveal previous attacks. There will be an almost specific food intolerance for fatty and fried foods, rich gravies, cabbage and its high brow relatives—cauliflower and brussel sprouts, raw apples, cucumbers and radishes. These foods bring on belching and bloating.

In the history we also consider that she has had children. We know that during pregnancy there exists a hypercholesterolemia and that gall bladder function is sluggish. It is easy to imagine how some of this cholesterol can precipitate out and remain in the gall bladder as nuclei for future stones.

The pain of an acute attack comes on suddenly, usually several hours after a heavy meal. It is located almost always in the upper right quadrant along the rib margin or in the mid epigastrium. It seldom if ever crosses the mid line. Sometimes it may be lower due to a ptotic or enlarged liver. It may radiate along the seventh intercostal nerve to the inferior angle of the right scapula or may be interscapular. It does not radiate to the shoulder unless there is peritonitis with irritation of the diaphragm and stimulation of the phrenic nerve.

Vomiting is a common though variable symptom. May be slight in the absence of stone or peritonitis and severe in the presence of either or both of these. It gives only partial relief from pain.

Fever is also variable, ranging between 100° and 104° and comes on early. There is leukocytosis of 10,000 to 20,000. A steadily rising count and temperature is an indication of threatened or actual perforation or gangrene.

PERFORATED PEPTIC ULCER

This takes place No. 1 where early diagnosis is imperative. Fortunately except in the case of the forme fruste ulcer, it is one of the easiest of the abdominal emergencies to diagnose at its onset. Delay in diagnosing or missing the diagnosis is giving the patient the old Roman thumbs down sign. In no other abdominal emergency is the time element so vital. If diagnosed and operated on in the first six hours the prognosis is good, in 12 hours the chance for recovery has dropped to about 50-50. After 24 hours or longer, our patient will do about as well by calling in one of the local faith healers for a miracle.

In making the diagnosis, it is well to remember that it is rare in the female. A history of peptic ulcer is of great help. However, many of these cases give no history of previous digestive disturbance. The present history is usually that of having had a good meal a few hours before, was feeling fine when suddenly and without warning an agonizing pain seized him and doubled him up. The pain, generally epigastric, is so severe that he may fall writhing to the ground, begging for any kind of relief. The pain remains localized only a very short time and then moves downward usually along the paracolic gutter. It is some time after this abrupt onset when we first see him. He is in great pain, generalized throughout the whole abdomen and may radiate to one or both shoulders from diaphragmatic irritation. He is in a state of shock with rapid thready pulse, shallow rapid respiration and his skin is cold and clammy. Here is where muscle rigidity means something, and the term board-like is no exaggeration. There is also wretching and vomiting and with each effort to vomit he cries out with pain. He doesn't want to be moved or even touched. With the stethoscope we find a silent abdomen—a definite sign of peritonitis. Finally the conclusive diagnosis is made by x-ray and finding a pneumo-peritoneum. In making this x-ray it is probably better to place the patient in the left decubitus position so that the air bubble will rise up between the liver and the right leaf of the diaphragm.

RENAL COLIC

Seen oftenest in middle and aged male. Restless, cold and clammy, usually bent over holding side of abdomen or leaning on some object to put pressure on affected side. Cries for relief of any kind. Pain may be so severe as to cause nausea and vomiting. Occurs suddenly and lasts from a few seconds to hours. May have single attack or may be recurrent from days to years. Pain may radiate upward toward scapular or medial to epigastrium or even to the opposite side—the so-called renorenal reflex. May go down to thigh and to labia or testes.

Diagnosis is made on history and laboratory findings. Physical examination gives very little definite aid. The laboratory may report blood, pus, crystals or bits of tumor tissue. In females use catheterized specimen. Intravenous pyelography is of great help and is not contraindicated by any acute abdominal condition.

INTESTINAL OBSTRUCTION

This condition, while not as urgent as perforated ulcer, still demands early diagnosis and treatment. In the form of strangulated hernia it was probably one of the first abdominal emergencies to be referred to the surgeon for treatment. This continues to be the type of obstruction we see most frequently and of course it is the easiest to diagnose. The other common types are intussusception, usually seen in infancy, obstructions caused by adhesions or bands and volvulus, usually seen in middle life and obstructions caused by malignant changes and seen in the older age group.

Diagnosis depends primarily on pain, vomiting and obstipation. Pain usually comes on suddenly and is severe, cramping and spasmodic. The onset is accompanied by some degree of shock. This may be so mild as to be hardly noticed or it may be severe with the usual manifestations. This clears up early and the patient is fairly comfortable except during the spasmodic bouts of pain. This pain is severe and results from violent peristalsis attempting to push the intestinal content past the obstruction. Here the stethoscope aids in diagnosis. The hyperperistalsis can be heard accompanying the pain and when the peristalsis quits the pain subsides.

Vomiting is an early symptom. Whether this is from increased intraluminal tension with stretching of the peritoneum and mesentery, hyperirritability of the bowel adjacent to the site of obstruction or to a reversed peristalsis, is not a settled question. Vomiting almost always occurs but the amount and time of onset is not constant. The higher the obstruction, the earlier and more severe the vomiting. If the obstruction is in the colon the vomiting will probably be mild and late. This time of vomiting is useful in differentiating obstruction in the small or large bowel. Another point worth remembering is that in this early vomiting the material brought forth consists of undigested food, bile and digestive juice—it is not feculent. The so called fecal vomiting is a late and bad prognostic symptom. This was well expressed by an Englishman—I don't recall his name. He said in speaking of intestinal obstruction, "The man who depends for his diagnosis on the classical symptom of fecal vomiting, it would have been better had that man entered this life as a classical example of an early abortion."

Obstipation is constant. If the obstruction is complete, neither gas nor feces will pass. Here the effects of enemas may be misleading. Gas and fecal matter may be obtained following 3 or even 4 enemas, depending on the height of the obstruction. It must be remembered that the results are from the bowel distant to the obstruction.

Distention is one of the later symptoms. If the obstruction is high, there may be no or practically no distention. If in the colon we see the greatest distention it comes on early but may be almost imperceptible at first and then progresses at a moderate rate. Great distention is usually found in an obstruction that has existed for some time.

X-ray plays a very definite part in the diagnosis. A flat plate gives a fairly conclusive picture and also helps locate the site of the obstruction.

The diagnosis is made on pain, vomiting, obstipation and x-ray. To wait for marked distention or feculent vomiting is to invite disaster.

ACUTE PANCREATITIS

This must be considered in any acute abdominal complaint. Although its actual occurrence probably accounts for less than 1 per cent of abdominal emergencies acute edematous pancreatitis occurs much more frequently than the more severe hemorrhagic type. The condition is difficult, if not almost impossible, to diagnose clinically. The main reason for attempting its diagnosis is to differentiate it from other conditions because as far as treatment goes, the edematous type usually gets well without treatment while the fulminating hemorrhagic type seldom responds to any kind of treatment.

Acute pancreatitis is usually found in females, past forty and overweight. In this it resembles gallbladder disease. The onset is sudden with severe vise like pain, similar to that of perforated peptic ulcer. This pain may be referred to the back, left chest, lower abdomen or left scapular regions. There is localized tenderness in the epigastrium. There may be rigidity at first but this usually relaxes after the crest of the onset. Severe shock accompanies the pain. There is vomiting of a reflex type. This is usually more violent wretching than productive vomiting.

The laboratory test for serum amylase is our best diagnostic aid but even this must be interpreted with care. The normal figures run from a low of 80 to a high of 320 mg. per cent with the average about 154. To be indicative of acute pancreatitis the serum amylase must be at least 5 times the average normal and the analysis run on a fresh specimen. It increases almost simultaneously with the onset of symptoms, reaching its peak in 72 to 24 hours and then falls with moderate speed, returning to normal in 2 to 6 days.

Other conditions in which we have a moderate increase are perforated peptic ulcer, diseases of the salivary glands, including parotitis and impaired excretion through the kidneys.

ACUTE CORONARY HEART DISEASE

Acute coronary thrombosis, or as more descriptively called, acute myocardial infarction can very easily be confused with perforated peptic ulcer, acute cholecystitis and acute pancreatitis. However, it produces symptoms which though not actually diagnostic are sufficiently suggestive to make a tentative diagnosis. Males are affected in a proportion of 7 to 3. It is seen more frequently in active middle life. The onset is sudden with severe pain in the precordium, substernal or in the upper epigastrium and is described as vise-like giving the impression of pressure or constriction. It may remain fairly localized or may radiate to the shoulders and down the arms. After 12 to 24 hours there is usually a slight rise in temperature, 99 degrees to 101 degrees, with leukocytosis averaging about 15,000. The sedimentation rate is increased.

The appearance of the patient is fairly characteristic. He is anxious and restless, unable to get comfortable in any position. There is sweating and pallor. The pulse is weak and thready and the rate usually over 100. The final diagnosis is made only with the aid of the electrocardiograph.

This is very definitely a medical problem and is mentioned here only because it can easily be confused with acute abdominal conditions.

Discussion

Dr. C. H. McCall (Gulfport)—The essayist can be complimented on both the selection of his subject and the excellent paper which he has prepared. Those of us who do surgery cannot help feeling that this is a timely subject and should be ever before us. I know of no place in the practice of medicine where the saying, "I would rather be right than President," fits with such exact nicety.

The paper needs very little discussion because of its completeness, but one could talk for hours on the subject. One phase impressed me very much: in not depending on blood counts for diagnosis in acute appendicitis, especially in children. Within the past three months this has been indelibly impressed upon me and my associate, for we have had three cases almost in a row in which the symptoms were that of an acute appendix but in which the blood count was low, being ten thousand; and a repeated blood count in each instance had fallen, but with an increase in symptoms, and on each occasion an extremely acute appendix was removed.

Therefore, by way of emphasis I would urge that a most careful history be taken in the very young and that it be given by an individual who has had the child under observation as nearly as possible throughout his acute illness. Careful physical examination, with all of us familiar, should be given; for many times due to the emergency it has not been carried out as painstakingly as should be done.

If I may occupy a few minutes further, always consider ectopic pregnancy in abdominal emergencies in the female in the child-bearing age, for which recent months we have had several cases in which this was suspected but only confirmed at time of operation.

Dr. E. R. Nobles (Rosedale)—The essayist has very ably discussed the chief cause for acute abdominal symptoms within the abdomen.

The subject has been covered about as completely as it could be in the time allotted, so I will direct your attention briefly to some of the snares and delusions we have learned by experience in trying to interpret the symptoms these patients present. This is an age-old problem with which we are constantly confronted. It is a challenge to anyone's diagnostic ability, and if but few embarrassing mistakes are to be made, it is imperative to observe and practice certain well-established principles in diagnosis.

The appendix is the chief offender, especially in the first and second decades of life, and these young patients frequently present the classical symptoms in their proper order. In the older patients, this is not true for we have seen acute appendicitis in them with most of these symptoms missing. The most constant symptoms in these patients have been localization of pain and loss of appetite.

Acute cholecystitis either with or without stones is fairly easily distinguished, but I would like to stress the fact that constant pain is due to edema of the gall bladder and colicky pain to obstruction (sometimes, of course, there are both, if the obstruction continues long enough) but those with obstructive lesions should receive the benefits of surgery as early as possible in order to avoid the ever-present danger of gangrene and perforation.

A perforated peptic ulcer is ushered in with dramatic symptoms. One positive diagnostic sign when obtainable is free air seen with a scout film under the right side of the diaphragm as the essayist has stated, but this should not be confused with the air bubble seen in the fundus of an empty stomach. This bubble is shorter and thicker than the one seen under the diaphragm which is thin and elongated.

The pinpoint perforation deserves special mention, for these patients can present a very misleading picture. They frequently can straighten up and walk about after a paroxysm of pain subsides and the air bubble remains intragastric as a rule. We had a patient in the hospital for a week before we did an exploratory laparotomy and found this to be the cause of the recurrent spasms of pain.

The Miller-Abbott tube by deflating the intestines and reducing the toxaemia caused by the absorption of stagnant intestinal contents has removed from the field of emergency surgery a large number of patients that fall into our hands with acute intestinal obstruction. In every suspected case it is worth a trial for at least twenty-four hours or longer if the patient is improving unless there is strong evidence of gangrene of the bowel.

We recently saw in consultation a white female aged seventy, who was in shock, mildly jaundiced with a weak rapid thready pulse suffering intense pain in the epigastrium which radiated to the upper left abdomen and back. She gave a history of gall bladder disease but the physical findings on the right side of the abdomen were entirely negative. Acute haemorrhagic pancreatitis was suspected because of an increase in the serum amylase and the future clinical course confirmed this suspicion. This condition will account for a small number of the acute abdomens, but should always be thought of in this type of case if we are to avoid an unnecessary emergency operation on a very sick individual.

There are a great many conditions arising within the abdomen requiring emergency surgery that can not be determined prior to a laparotomy and even the chief offenders can frequently be quite confusing. When confronted with the problem, we try to be as sure as possible that the pathology is within the abdomen and is amenable to surgery before advising operation.

In children and young adults early basal pneumonia or diaphragmatic pleurisy or even herpes zoster must be thought of and eliminated. In patients past forty, it is imperative to rule out coronary disease, and sometimes other heart conditions common in the later decades of life. Gastro-intestinal symptoms are reflexly produced in a third to one-half of patients with renal calculus disease which is an ever-present possibility in practically all age groups.

The clinical laboratory, x-ray and other instruments and apparatus are useful aids in making a diagnosis in acute abdominal emergencies, but we have found generally that none of these can compare with a good history and a careful painstaking physical examination.

The story of the onset of the disease, the severity and progress of the symptoms, associated vomiting and intestinal activity is very important. A knowledge of the patient's past illnesses and emotional problems together with a thorough inquiry into any significant symptoms involving all the systems may bring out definite diagnosis data and anything less than this may not.

A physical examination to be complete must include pulse-rate, temperature, respiration and blood pressure. The general appearance and attitude of the patient must be taken into consideration. Of course, the abdomen should be examined. A rectal examination and in addition in the female a vaginal examintion should be made. The chest should be checked and the reflexes tested.

It is true that every diagnostician develops his own routine method for examining a patient, but if these two fundamental principles in diagnosis, a good history and a careful physical examination, are observed and practiced, he will rarely be led astray.

Etiology of Pain in Common Headaches, A Review of Recent Literature*

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For the most part the causative factor in the type of headache that does not lead the sufferer to find medical attentions is due to emotional and physical exhaustion. Functional headaches, I believe, will always be with us and will be resistant to medical treatment because they perform a service to mankind. The need will increase as long as civilization continues in its present course. This service is the face-saving quality it possesses, as it is a respectable and socially acceptable illness.[1, 2]

It is cogent but difficult to define what we mean precisely by headache. Anatomical delimitation of the structure called the head is variable. It is trite but necessary to mention that headache is entirely subjective thus to studying and understanding the phenomenon we are constantly at the mercy of the veracity, consciously or unconsciously of our patients.[3] There are few instances in human experience where so much pain may mean so little in terms of tissue injury or where failure to separate the ominous form from the trivial cause of the headache may cost life, or create paralyzing fear.[4]

There are diverse classifications of headaches. Headache as a symptom has been classified as a cause and effect; allergic and nonallergic;[5] physiological classifications;[7, 8] and classifications of headaches accounting for chronicity.[6] All of these have their merits, however, for the purpose of this discussion I have chosen to coordinate some of these and apply principles of others and present the classification according to the supposed source of headache, intracranial and extracranial. Intracranial sources of headache:

1. Brain tumors.
2. Meningitis and infections of the brain coverings.
3. Lowered intracranial pressure (via lumbar puncture).
4. Systemic febrile infections.
5. Chemical agents such as amyl nitrate and nitroglycerine.

Extracranial sources of headache:

1. Migraine.
2. Histamine cephalgia.
3. Allergic headache.
4. Headache associated with nasal allergy.
5. Myalgia of the head.
6. Arterial hypertension.
7. Temporal arteritis.
8. Cranial trauma.
9. Psychosomatic disturbances (tension, constipation).
10. Psychiatric disorders (true neuroses, hysterical dissociation).
11. Cervical disc.
12. Cervical arthritis.
13. Hyperacidity.
14. Hypoacidity.

An understanding of pain in and on the head must be introduced first by knowledge of which of the structures of the head are pain-sensitive and which are non-sensitive. These structures are listed as follows: Pain-sensitive structures:[8]

1. Tissues covering cranium especially the arteries.
2. Intracranial structures:
    a. Parts of the dura mater (at the base of the brain).
    b. Dural arteries.
    c. Venous sinuses and tributaries.
    d. Cephalic arteries at the base of the brain.
3. Cranial nerves V, IX, X.
4. Cervical sympathetic nerves (transmission of pain).
5. Cervical nerves I, II, III.

Non-sensitive structures:

1. Os cranium and its veins.
2. Brain parenchyma.
3. Pia, arachnoid and most of the dura.
4. Ependymal lining of ventricle.
5. Choroid plexuses.

Having in mind the pain-sensitive structures, there are six basic mechanisms by which headache can be produced.[9] These are:

1. Traction on the large venous sinuses or their tributaries from the surface of the brain.
2. Traction on the middle meningeal artery.
3. Traction on the large arteries at the base of the brain.

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4. Pressure upon or inflammation of pain-carrying cranial nerves and cervical nerves.
5. Dilatation of intracranial and extracranial arteries (branches of external and internal carotids).
6. Edema and spasm of neck muscles.

Painful impulses arising from intracranial structures above the tentorium cerebelli are carried by branches of the fifth cranial nerve and are referred mainly to the fronto-temporal region. From structures on the lower surface of the tentorium cerebelli and below it, pain is carried by the ninth and tenth cranial nerves and the upper three cervical nerves and is referred to the back of the head and upper neck.[12, 13]

Brain tumor produces headache by means of dislocation of the intracranial contents. This may account for increased intracranial pressure; however, in itself the increase in pressure does not cause pain as may be proved by the painless increase of pressure by intrathecal injection of normal saline to two or three times the normal level, and the existence of papilledema and high cerebrospinal fluid pressure in patients who have cerebral tumor but have no headache.[14]

There are four mechanisms associated with the headache of brain tumor:[9]

1. Traction on the large venous sinuses or their tributaries from the surface of the brain.
2. Traction on the middle meningeal artery.
3. Traction on the large arteries at the base of the brain.
4. Direct pressure on the cranial and upper cervical nerves which have pain carrying fibers.

The value in localizing the tumor is limited by two facts; 1) the headache may be remote from the site of production, and 2) the site of production may be remote from the tumor.

If the headache is continuous it may aid in localization thusly:

1. In the absence of papilledema, when the headache is one-sided the side of the ache is usually the side of the tumor.
2. The tumors of the posterior fossa present a headache initially in the back of the head.
3. Tumors above the tentorium in the absence of papilledema, headache is usually in the front of the head.
4. If the headache is both frontal and occupied it is without localizing value, though the history of the initial site may indicate the site of the lesion.

Headache in meningococcic meningitis is persistent and frequently agonizing, commonly referred to the occipital area. Recalling the pathological picture of meningitis at autopsy it is well understood how congestion, swelling and purulent exudate in and about the pain sensitive structures can cause pain. Tubercular meningitis, coccal meningitis and virus diseases of the neuraxis all function on a similar basis.[10] These injured fibers may have an exceedingly low threshold and ordinarily non-painful stimuli may cause a patient to complain of pain.[20]

Post-lumbar puncture headache is one of the most common complaints following spinal anesthesia. The scalp may remain sensitive for some time apparently because of fifth cranial nerve irritation. It clinically represents a low intracranial pressure headache and is said to occur in about 16 per cent of all lumbar punctures. The removal of spinal fluid and subsequent leakage of this fluid from the arachnoid faster than it can be replaced by the choroid plexus causes there to be a pull of the great veins of the vertex. Furthermore compensatory dilatation of the intracranial veins tends to increase brain weight and thus augments the tension on the venous sinuses, this accounting for pain.[3]

It has been shown that headaches associated with fever, as in systemic infections, the increase and decrease of the intensity of pain parallels the amplitude of pulsation of the cranial arteries. A patient treated with heat often suffers from headache, often occipital in location and of a deep, dull, and aching character. Salt deprivation and fluid balance are not the specific factors for these can be kept at normal levels by means of infusions.[10]

Chemical agents as such which produce a vaso-dilatation may account for headache on a basis of stretching the pain sensitive blood vessel walls.

Considering the extracranial sources of headache phenomenon we may classify some of the headaches by some of their common characteristics. For example, migraine, allergic headache, histamine cephalgia, headaches associated with nasal allergy and myalgia of the head all have the common characteristics that they are a) of possible allergic etiology, b) may be concerned with a histamine factor and c) they are reversible. Though somewhat dissimilar the headaches of temporal arteritis and hypertension are similar in that there are present a) inflammatory changes, b) degenerative changes in the blood vessel walls and c) the changes are irreversible.[6]

The pain associated with migraine is probably due to traction on the arteries, spasm of the neck muscles and changes (edema) of the blood vessel walls. A patient with migraine does not complain that his arteries hurt, nor is he able to localize his headache except in a general way.[3] The involvement in migraine is unilateral in onset following the vascular distribution of the branches of the external carotid artery.[1, 6, 9] Pain is due to traction, pulsation or distention of the extracranial arteries and possibly to some involvement of the nerves and the venous sinuses of the head. The causative factor for pain is in the muscle wall of the blood vessel as has been shown by the action of ergotamine tartrate. In therapeutic dosage its action is that of vaso-constriction. It acts in a peripheral manner on the vessel wall (muscles of the small arteries) for section of the vasomotor nerve does not interfere with its action.[6] When pain from sensitive areas of the head has been sufficiently long in duration and intensity a painful contraction on the skeletal muscles of the head, neck and shoulders develops and causes further headache.[20]

Of the precipitaing factors the most important is probably that of the personality, for certain individuals have a psychobiotic predisposition to sustained pernicious emotional states. During these states some labile psychologic mechanism may set off the chain of events constituting the attack of migraine. Initial vaso-constriction is probably responsible for the pre-headache phenomena, scotomata, vertigo, etc. The site of this action is not in the orbit or retina but apparently in the cranial cavity.[4]

Migraine or some type of vasomotor or allergic headache with associated symptoms is much more common in children than realized. At the age of four or five the headache may be a minor symptom of the periodic attacks which are marked by temperature elevation, loss of appetite, langour, abdominal pain and vomiting.[15] Some of these children later under more adult emotional stresses demonstrate the typical migranous syndrome.

Pain in histamine cephalgia is concerned with arteries at the base of the brain and the internal carotid artery and its branches. Intracranial arteries with their increased intra-arterial pressure and traction produce pain. The dural and extracranial arteries are not involved. This headache is due to histamine action which may result from:

1. Hypersensitivity of the involved tissues.
2. Inability of some individuals under given circumstances to break down proteins into the final amine stage and thus produce an extra amount of histamine.[6, 16]

Histamine is a dilator of capillaries and it achieves its result without mediation of the nerve supply to the vessel. Since it dilates cerebral and meningeal vessels its injection is notably followed by a fall in the cerebrospinal fluid pressure and general blood pressure.[17] Thus headache pain may be produced not only by traction of the arterial wall directly but by sagging of the intracranial contents which in turn aggravates this tugging on the vessels of the vertex and base.[18]

Allergic headaches, myalgia of the head and the headaches of nasal allergies are all probably due in a large manner to the production of histamine. The causative factor presents itself through the ingestion of food, the exposure to physical allergenic agents or to inflammation of the sinusal ostii secondary to allergenic substances. Prolonged contraction of the muscles of the neck probably results and a negative vascular ischemia which leads to stimulation of nerve endings and results in pain referred to the back of the head, neck and upper portion of the shoulders.[6, 18, 19]

Arterial hypertension as a cause of headache is probably accused more often than it occurs. Explanation rests on the contractile state of the external carotid artery and the fluctuation of the blood pressure is of importance. An increase in amplitude of contraction in labile states of hypertension, plus the occurrence of a personality susceptible to tension states accounts for both vascular pain component and spasm and edema of the neck muscles as the sources of pain.[6, 9, 10]

Temporal arteritis is a rare febrile disease, having concurrent signs and symptoms of an infectious disease, plus destructive changes in the walls of the blood vessels. These two sources explain the pain stimulative mechananisms.[10]

For the greater part the headaches associated with the remaining extra-cranial sources of headache enumerated, arises secondary to spasm and edema of the neck muscles. Such pain may occur in cervical disc,[21] cervical arthritis, psychoneurosis and cranial trauma. In the latter instance, cranial trauma, this source of pain is of high frequency in those who have had nervous or neurotic symptoms prior to injury or in those with complicating environmental factors and especially compensation. Certainly much that was mentioned concerning brain tumor is applicable to intracranial trauma when a space occupying lesion as a hematoma is produced.[22]

There is no satisfactory explanation for the pain due to hyper- or hypoacidity to my knowledge, however, its occurrence has been established over many years of close clinical observation.[23]

SUMMARY: There has been presented a classification of headache according to source of its origin. Pain has been discussed with regards to the mechanism of production as it is found in some of the more commonly encountered headaches. Pain-sensitive intracranial and extracranial structures have been outlined, and an effort made to coordinate the occurrence of headache with these structures.

Headaches continue to be studied with intensity in diversified fields and although some understanding exists as to the mechanisms, and some measure of control has been devised; factual knowledge does not yet exist to explain all of the etiological factors concerned in headache production. Our emphasis in treatment therefore must continue for the present to relieve the paroxysms of headache and attempt to control the frequency and duration of attacks. In treating this symptom it is essential to maintain the broad concept of the patient as a whole with his physical factors, his personality and emotional problems, and to help him to develop an ability to surmount his handicaps and to develop an increasingly satisfactory philosophy of life.[24]

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Discussion

Dr. J. R. Simms (Oxford)—The frequency of headache is so great and its causes so many that to discuss adequately this one symptom involves the differential diagnosis of a great many diseases both within and without the nervous system. The seriousness of the symptom varies tremendously, from that due to a malignant brain tumor to the benign psychoneurotic headache. To determine the etiology of obscure headaches the physician's diagnostic skill and patience are taxed to the utmost.

Migraine is one of the common types of headache. The variability of symptoms in this disease, its unknown etiology, the vagueness of its definition and the difficulty in its diagnosis have led to an overestimation of its frequency, and to many the term migraine has almost become synonymous with headache. Such a position is unfortunate in view of the frequency and possible significance of this symptom.

I wish to discuss briefly the gynecologic aspect of the etiology of headache. It has been said that headache is the penalty women pay for the privilege of preparing for conception every month. The stability of almost every system in the body is upset by the up and down monthly cycle and the events which follow ovulation. Headaches together with other distressing symptoms result.

There are three characteristic headaches of women: 1) neurogenic, 2) hormonogenic, 3) psychogenic.

The neurogenic headache is exemplified by the occipital "pain in the neck" which is so frequently associated with backache. Here the pathology lies in the parametrial tissues, particularly in the uterosacral ligaments. There is a thickening of the posterior parametrium, the tissues in which we find the nerve supply to the uterus, including the great cervical ganglion (Frankenhaeuser), the hypogastric plexus and the sacral nerves. These supporting structures run from the isthmus of the uterus upwards and backwards to the sacrum and are in close relationship with the rectum on each side along their course. They make up the principle support of the uterus. Chronic cervicitis or chronic pelvic inflammatory disease will cause swelling, thickening, induration and finally scarring and shrinking of the uterosacral ligaments. The pain primarily experienced by this pathology is a backache but through some unexplained mechanism it oftentimes leads to an occipital headache and pain in the back of the neck. Occasionally this type of headache is the only symptom presented by the patient. Furthermore the changes in the uterosacral ligaments cause a narrowing of the channel through which the rectum passes and constipation results. This condition, chronic pelvic inflammatory disease or parametritis posterior, is one of the most frequently encountered diseases of women and should not be overlooked in search of the cause of a triad of symptoms often seen in women, namely, headache, backache and constipation.

The hormonogenic type of headache begins with the onset of menstruation and ends with the menopause. Caused by the low tide of ovarian hormones it appears just before or during the first few days of menstruation. Where the hormone level is consistently low the headache may last over longer periods and occur at any time of the cycle. The estrogenic hormone deficiency leads to an endocrine imbalance with spastic neurovascular reactions in the head and headache. A classic example of this neurovascular instability is seen in the hot flushes and episodes of hypertension of the menopause. The pH of the vagina is an excellent indicator of the amount of estrogenic hormones in the circulation. When the pH is brought within normal limits the hormonogenic headache disappears.

The psychogenic headache. In a patient presenting this type of headache other symptoms are usually present which reveal a personality change or a psychoneurotic constitution. The psychogenic headache is related to the hormonogenic type in that, with the low tide of estrogenic hormones of the premenstrual phase or the menopause, psychoneurotic tendencies are accentuated. Emotional states, pleasant or unpleasant, cause headaches in some women. Environmental stresses, which lead to psychic conflicts in these patients, either cause or augment headache. The headache is increased by excitement, disputes, domestic, social or business conflicts. Circumstances associated with fear or confusion will precipitate such a headache and for this reason the patient avoids crowds, churches and theatres.

The sensations complained of in the psychogenic headache are numerous. The patient uses superlatives in the description of the headache as "intense," "horrible," "unbearable," "awful" and describes the feeling as a constriction around the head, bursting, popping, dragging, freezing, cutting, extreme heat and many others. If the patient gets interested in some pursuit as long as interest lasts the headache will abate and for this reason almost any new treatment will be successful for a while. In the treatment of this type of headache more depends upon the physician and psychotherapy than upon any specific medication.

The manner in which psychologic conflicts or stresses cause headache involves two principal physiologic mechanisms, i. e., changes in the calibre of the cranial vessels (probably chiefly vasodilatation) and spasm or tonic contraction of the muscles of the head and upper cervical region.

A diagnosis of psychogenic headache, as in the case of all other psychogenic diseases, should not be made until all physical causes have been eliminated and after a careful study of the patient's background, constituttiotn, personality and environment.

Dr. Frank Donaldson (Jackson)—I have enjoyed Dr. Golden's paper very much. He has done an excellent job of classifying the etiology of pain in headaches. There is probably no single symptom that occurs more frequently in all fields of medicine. It is a pleasure for me to be able to discuss this paper from the viewpoint of a psychiatrist.

Solving the clinical puzzle of headaches calls for all the resources of psychosomatic medicine. Vasomotor alterations combined with muscular spasms are probably the most frequent cause of nervous headaches.

I would like to discuss one of the causative factors Dr. Golden has mentioned, that of personality. The psychobiotic predispositioned to emotional reactions, including headaches, has received a great deal of attention in the last few years. There has been some very valuable research done in this field by several recognized investigators.

Nothing will take the place of careful history that covers the life pattern and the precipitating situation as well as the dominant and most sustained feelings and attitudes.

There are a multiplicity of personality features, life situations and emotional reactions that are of importance. Probably the personality of the migraine headache individual has been better classified than any of the others. For that reason I will discuss the migraine personality briefly. Childhood history of these individuals reveals that a majority of them were delicate, sickly, shy and withdrawn and usually extremely obedient. During adolescence they are more than usually preoccupied with moralistic and ethical problems, particularly concerning sex. In adult life practically all of the migraine individuals studied were unusually ambitious and strove for achievement and success. Most of them were perfectionists and quite efficient. A great many of them are quite inflexible in their attitudes and a large majority harbored resentments. There was frequently a history of frustration involving dissatisfactions about family, financial or personal status. They try to gain approval by doing more and better, through application and hard work.

It is futile to try to reduce the problem to this or that element in the psychobiologic constellation and the answer to each individual case can only be obtained by painstaking study and history taking.

Anticoagulant Therapy—A Review

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THROMBOSIS and embolism are not common, yet because physicians are increasingly aware of these conditions, cases are being recognized perhaps six or seven times more often nowadays than in previous decades. There is, also an increase in the incidence of thrombo-embolic disease due largely to the advancing age level of our population.

We are now able to provide prophylactic measures to avoid thrombosis and embolism. If they do occur, we can provide definite therapeutic measures, both surgical and medical, which if quickly and properly applied will save much disability as well as many from death.

For some years vein ligation was the chief therapy for thrombo-embolic disease, but in recent years anticoagulant therapy has come to have a wider field of application than ligation therapy. Let me hasten to add that **both** may be indicated together.

The main deterrent to more general use of anticoagulant therapy has been the expense involved and the necessity for strict laboratory control in administration of heparin and dicumarol. These considerations are still important but they are not prohibitive.

Heparin is still quite expensive but its administration is fairly easily controlled by simple coagulation time determinations. I'd like to discuss the various heparin preparations now available, but there is not sufficient time. You probably already know that the solution is given by either constant intravenous drip (diluted in saline), or by intermittent intravenous injection (q4hrs.). A strong solution of heparin by intermittent intramuscular injection (q8hrs.) is being used to some extent. For subcutaneous injection, heparin in a mixture of gelatine and dextrose is available, to be given q 24-48 hrs. Heparin Pitkin Menstruum (Warner); Depo-Heparin (Upjohn).

With heparin, one aims to prolong the coagulation time to roughly three times the normal. If **hemorrhage** occurs from heparin, it is ordinarily easily controlled by transfusion of fresh (not over three days old) whole blood and anticoagulant therapy or injection of protamine sulphate (Lilly), which is an efficient heparin antagonist. Protamine may also be used to reduce heparin effect if immediate surgery becomes necessary in a heparinized patient.

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Dicumarol is given orally. Its effect is observed and dosage regulated by daily determination of patient's prothrombin time by the method of Quick. The therapeutic range is indicated by patient's prothrombin activity remaining between 10 and 30 per cent of normal. If hemorrhage occurs from dicumarol transfusion of fresh whole blood plus intravenous administration of 360 mg. vitamin K is indicated, using five ampoules of hykinone of 72 mg. each, diluted to 250 cc. and given intravenously in 30 minutes. Vitamin K_1 oxide is now said to be superior to other forms of vitamin K in controlling dicumarol effect.[1] If there is no hemorrhage and the prothrombin test simply shows excessive dicumarol effect*, it may be adequately controlled by intramuscular or intravenous injections of 10 mg. to 72 mg. vitamin K every six hours for three to four doses.

Heparin acts immediately while the action of dicumarol attains therapeutic effect after 48 hours or so. For this reason both drugs are often used together at the start of therapy. Then heparin is discontinued after dicumarol has reached its full effect.

General information regarding dosage, laboratory tests necessary, and indications for and against anticoagulant therapy are pretty adequately covered by the information circulars in each package of dicumarol and heparin obtained from the druggist.

One does not want to diminish the risk of thrombosis by using anticoagulants only to increase the number of deaths from hemorrhage.

Last year I discussed "anticoagulant therapy" before a district meeting of colored physicians and one of them mentioned having encountered a case with cerebral hemorrhage from dicumarol overdose. Someone had given the patient a prescription for dicumarol with instructions to take one tablet four times a day until he started bleeding. Unfortunately, his bleeding was intracerebral instead of some more convenient form as nosebleed. That happened in a neighboring state, not Mississippi.

The risk of major hemorrhage from anticoagulant therapy is fairly minimal if care is used in dosage and laboratory control is maintained. Some tendency to hemorrhage may be noticed in perhaps 10 to 15 per cent of treated cases according to certain authors, although I have personally observed much less than that percentage. Major hemorrhage may occur in perhaps 2 up to 10 per cent of cases. Fatal hemorrhage has been reported in approximately 30 cases up to the past year.[2]

I would like to go now into a brief discussion of the various conditions in which anticoagulant therapy is being used, but first we might list the general objectives of anticoagulant therapy—under three headings.

Objectives of Therapy

The desired effects of anticoagulant therapy are:

1. Prevention of thrombus formation.
2. Prevention of propagation of thrombus which has already formed. The thrombus will eventually become organized. There is probably little effect toward reducing the size of a thrombus already formed, although some believe that anticoagulants will promote dissolution of clots at the sludge state of development. Both 1 and 2 are aimed toward diminishing the risk of embolism as well as reducing the local damage by intravascular thrombosis.
3. Control of embolism. Prompt institution of heparin therapy is essential to control the original thrombosis, be it in the leg veins or elsewhere, and also to limit the propagation of thrombus about the embolus itself.

Indications

Indications for anticoagulant therapy may be tentatively and incompletely listed as follows (I have listed nine items and each will be discussed as it is listed):

1. **Prophylactic postoperative anticoagulant therapy** is being studied extensively. Such **prophylactic** therapy is still in experimental stages. As yet there is no widely accepted routine prophylactic treatment schedule to follow, although it has been definitely shown that the incidence of thrombosis and embolism is greatly diminished by anticoagulant prophylaxis.[3]

Some feel that anticoagulant prophylaxis should be strongly considered if the patient is over 45, and is having surgery for lower abdominal or pelvic pathology, particularly if the pathology is a malignancy. Obesity and/or heart disease also add to the danger of thrombosis and the desirability of anticoagulant prophylaxis.

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*The exact critical level is conjectural. One may worry if prothrombin activity goes below 8% of normal. Bleeding seldom occurs with level above 5%, but on the other hand bleeding may occur with the level well within the usual therapeutic range!

Most surgical prophylaxis seems to aim at only a moderate anticoagulant effect. There is some question as to the real protection this offers against thrombosis, but certainly this caution is well warranted as nobody wants to encourage postoperative hemorrhage. Surgical groups who have reported on prophylactic therapy with dicumarol have usually confined themselves to a few small doses. Dicumarol may be given in 200 mg. dosage the day preceding operation and then continued for four or five days (with minimal doses) after operation. If heparin is to be used, it is not started until at least 4 hours postoperatively and is continued 4 or 5 days. According to some cautious authors dicumarol therapy may be started on the second day after operation or delivery, and heparin not until 3 or 4 days after operation or delivery.

Some groups favor prophylactic superficial femoral (bilateral) vein ligation in selected cases at the time of surgery. It seems difficult to assess the value of this measure as compared with anticoagulant prophylaxis in similar cases.

In operations on arteries and veins "regional heparinization" is used with heparin flowing over the site of anastomosis immediately after sutures have been placed and blood flow re-established through the repaired segment.[4]

In addition to postoperative cases, some mention should be made of the fact that injuries to the pelvis and lower extremities are often followed by thrombosis (in perhaps 10 per cent of cases) and prophylactic anticoagulant therapy should be used unless danger of hemorrhage is too great.[5]

There seems to be no need here to expound upon the increased tendency for thrombosis to occur in cases with prolonged bed rest, with props under the knees, and with patients propped up in bed—factors encouraging venous stasis in the legs.

2. As the second indication for anticoagulant therapy I have listed **phlebothrombosis** and **thrombophlebitis,** either occurring following operation or occurring in debilitated medical patients.

In **phlebothrombosis,** vein may be considered before institution of anticoagulant therapy. I shall not here enter into the question of selection of cases for ligation but I would like to point out the fact that some authors now feel that it is preferable to use anticoagulant therapy without any vein ligation unless embolism occurs or recurs in spite of adequate anticoagulant therapy. In a postoperative case with danger of hemorrhage if anticoagulants are used, ligation is of course, the treatment.

In **thrombophlebitis,** paravertebral block is still considered good therapy, particularly if there is marked change in the skin temperature on the affected side. It has been pointed out, however, that anticoagulant therapy frequently makes such measures unnecessary. The warning has been sounded against using paravertebral block in any case which is already under anticoagulant therapy, as several cases of fatal retroperitoneal hemorrhage have occurred in such cases.

Vein ligation is seldom done in thrombophlebitis as the clot is usually firmly attached to the involved inflamed vein wall. In septic embolism occurring with thrombophlebitis, however, vein ligation may be indicated at once.

Anticoagulant therapy for thrombosis in the lower extremities is usually continued for ten days to two weeks.

Quite commonly embolism is the first sign of phlebothrombosis or thrombophlebitis, although such conditions may be diagnosed clinically earlier if careful watch is kept for suggestive signs.

3. **Pulmonary embolism** is an indication for institution of prompt anticoagulant therapy, whatever the source of the embolism. Emboli may come from the veins of the lower extremity or they may come from mural thrombi in the heart.

A few years ago we were inclined to look upon pulmonary embolism as a bugaboo of the surgeon chiefly, but in the past ten years we have come to realize that pulmonary embolism occurs with about the same frequency in medical cases as in surgical.

Small emboli may go almost unheralded, except by a little pleurisy pain, and there may be little cough, no hemoptysis, and no physical or x-ray signs. Severe fatal embolism is nearly always preceded and presaged by earlier, smaller emboli which should have given the signal for adequate therapy by ligation, or anticoagulants, or both.

Signs of severe pulmonary embolism are pain, shock, perhaps cyanosis, dyspnea, tachycardia, apprehensiveness, and hemoptysis (the latter may take time to show up). They call for emergency treatment without waiting for definite confirmation of the diagnosis. EKG changes and x-ray evidence may not show up for a day or two. A considerable percentage of these patients dies within the first hour.

Prompt therapy of pulmonary embolism means intravenous injection of atropine grs. 7/75 to 1/60 (this should be repeated t.i.d. for three days or so); intravenous administration of papaverine grs. ½ (this has been found useful by some and regarded as useless by others); oxygen by mask; morphine may be given p.r.n.; and anticoagulant therapy, best instituted by immediate (don't wait for coagulation tests!) intravenous administration of heparin solution and continued according to any one of various methods of using heparin with or without dicumarol. Anticoagulant therapy is continued then for 2-3 weeks, and until patient is ambulatory. Incidentally, some authors report that they allow patients up as soon as full anticoagulant effect is obtained,[6] though the usual recommendation is bed rest for two or three weeks.

4. **Arterial occlusion** is an indication for anticoagulant therapy. This may occur from thrombosis or from embolism, in peripheral arteries or elsewhere. Therapy with heparin or dicumarol should be started immediately and continued for at least 10 days.[7]

Coronary thrombosis is the most important item in this category. As you all know, a committee of American Heart Association reported in 1948[8] that anticoagulant therapy is of great benefit in cases of coronary occlusion. Cases treated with anticoagulants showed a greatly reduced incidence of thrombo-embolic complications as compared with cases not so treated —12 per cent complications in the treated group as compared with 25 per cent in the untreated group—and 15 per cent mortality in the treated group versus 24 per cent in the untreated group.

They concluded that "anticoagulant therapy should be used in all cases of coronary thrombosis with myocardial infarction unless a definite contraindication exists." At the present time the generally accepted procedure is to institute heparin and dicumarol therapy at once, discontinuing dicumarol therapy for a period of four weeks.

5. **Congestive heart failure** is an indication for anticoagulant therapy, particularly during the period of confinement to bed. Such therapy may need to be continued for a considerable period in some cases.

6. **Long-term prophylactic therapy** may be used in medical cases with recurring thrombosis or embolism. This includes some cases with recurring coronary thromboses. It also includes cases such as rheumatic heart disease with episodes of auricular fibrillation which may cause multiple emboli to be thrown out into the pulmonary circulation or the peripheral arterial circulation. Last year Wright et al[9] reported on 70 cases of the above types, (also including cases of phlebitis migrans, etc.), in which long-term therapy had been successfully employed, with a total of 100 patient-treatment years without a single death due to anticoagulant therapy. Some of these cases had been subject to frequent recurrence of thrombo-embolic episodes prior to anticoagulant therapy and suffered no recurrences after institution of anticoagulant therapy. Some of these cases could be maintained after preliminary observation of the dicumarol effect, with prothrombin tests being necessary only once every week or ten days.* These authors mention that the dicumarol dose required by different patients varied from 300 mg. to 800 mg. per week.

7. Heparin has been recommended as efficient in preventing gangrene which might occur following **frost bite.**

8. Anticoagulants have been found helpful in treatment of thrombosis of **the central vein** of the retina and in cavernous sinus thrombosis.

9. It might be mentioned here that in **cerebral thrombosis** anticoagulant therapy might be quite helpful, yet this condition is so difficult to differentiate from hemorrhage that anticoagulant therapy here is a rather dangerous undertaking. **Cerebral embolism** is more easily diagnosed and is an indication for treatment.

Contraindications

Contraindications to anticoagulant therapy are listed and discussed fairly fully in the information circulars with each vial or package of anticoagulant. We will list some of the contraindications: lack of proper laboratory facilities, diminution of the normal prothrombin activity, pregnancy, significant hepatic or renal disease, thyroid disease, ulcerated lesions from which hemorrhage might occur, transurethral prostatic resection, blood dyscrasias with bleeding tendency, and recent operations on brain and spinal cord. In severe hypertension caution is necessary. Following biliary tract surgery, anticoagulants should be used cautiously if at all. Subacute bacterial endocarditis, once listed as an indication, is now listed as a contraindication to anticoagulant therapy because a number of cases of cerebral hemorrhage have occurred with such therapy.

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*In one case reported(10) by Sprague satisfactory control of long-term dicumarol therapy was maintained with determination of prothrombin time only once a month. The maintenance dose in this case was 50 mg. daily.

Patients with a therapeutic level of prothrombin activity who develop minor hemorrhage such as bruising, episcleral hemorrhage, slight bleeding from gums, or 15 - 20 r.b.c. in urine, are not generally regarded as being in any great danger.

Summary

The above is an abbreviated general review on anticoagulant therapy.

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Discussion

Dr. J. P. Tatum (Tupelo)—Dr. Lewis is to be congratulated for his presentation of a very comprehensive review of an interesting and timely subject. Anticoagulant therapy has assumed an important place in the present-day practice of medicine, but it is essential that it be thoroughly understood and properly used.

I want to suggest to the members that dicumarol may produce an allergic reaction in some patients. I have seen no mention made of this in the literature, but it has occurred in my patients three times. In each instance the reaction was noticed only in the white blood count with no subjective symptoms of any kind. In each case there was a progressive lowering of the total white count, a decrease in the poly count and an increase of lymphocytes, and an increase of eosinophiles. In each case the drug was continued until the white count had been depressed from an average of 11,000 to 5,000 or below and the poly count had decreased to 20 per cent. The drug was then discontinued and was followed by a prompt restoration of a normal count. Since that time I have made it a routine procedure to secure frequent white blood counts of all patients receiving dicumarol therapy but there have been no further instances of allergic reaction.

The work in anticoagulant therapy at the present under investigation by Kay and Ochsner should be mentioned. The work is primarily concerned with the prevention of thrombotic phenomena in postoperative cases. They have found that the anti-thrombin level of the blood drops below normal in direct proportion to the length of time required to perform surgery. They have found that when the antithrombin level postoperatively falls to low levels that clotting almost always occurs, but that when the antithrombin is maintained in a normal range postoperatively, clotting does not occur. They have found that this low antithrombin may be promptly restored to normal by the use of injectible alpha-tocopherol and 10 per cent calcium gluconate. This they feel in a large measure eliminates the danger of postoperative thrombosis and at the same time, in that it simply restores the blood picture to normal, produces no danger of postoperative hemorrhage as is constantly present with the use of postoperative heparin or dicumarol.

Dr. W. K. Purks (Vicksburg)—Dr. Lewis has brought to our attention a question of tremendous importance to us all and has given an excellent review of literature pertaining to the subject of thrombo-embolic disease.

I would like to emphasize the relative frequency with which this problem is encountered in surgical and medical practice. Various authors estimate that thrombosis and embolism occur in about 0.2 per cent of all operations and account for 6 per cent of all postoperative deaths. Each year 34,000 people die of pulmonary embolism and 3,000,000 people now living in this country will die of this condition. Further, it is a well-considered opinion that more victims of coronary thrombosis die of pulmonary embolism than of the primary cardiac pathology.

Dr. Lewis has given due emphasis to the predisposing causes of thrombosis and embolism and their consideration implies the desirability of preventive treatment. In our clinic, in spite of a very active surgical service, there has been only occasional use of prophylactic vein ligation or use of anti-coagulants in those presenting the predisposing causes. We are impressed with the fact that the vast majority of patients suffering from embolism will, if carefully observed, show an initial small embolism. Consequently, there is, as a rule, an opportunity after the first attack to employ vein ligation, heparin, or dicumarol and prevent a fatal attack. There will, of course, be an occasional patient in whom a massive embolism and instant death are the first suggestions of the problem.

Allen has emphasized the fact that in the postoperative patient, an unexplained simultaneous rise of temperature, pulse and respiration is diagnostic of pulmonary embolism until proved otherwise. The diagnosis of embolism, however, is largely dependent upon clinical suspicion and an acute awareness of the problem. X-ray is rarely of help at a time when help is needed, although eventually roentgen evidence of embolism may be found in a considerable number of patients. The electrocardiogram is likewise of value only in a few patients, namely, those with rather massive embolism and signs of acute cor pulmonale. However, those electrocardiographic changes originally described by White and McGinn may clarify the differential between massive embolism and cardiac infarction. There is no pathognomonic electrocardiographic pattern. Usually, there is 1) the development of a deep S wave in the first lead with or without depression of the ST segment, 2) depression of the ST segment in lead two followed by a rising ST segment with a low or isoelectric or biphasic T, 3) deep Q wave in the third lead with slight convexity of ST segment and inverted T3, and 4) diphasic or inverted T wave in lead 4F.

The use of anti-coagulants in coronary thrombosis is a disputed question. One group will contend that failure to use anti-coagulants is firm basis for a malpractice suit whereas another group maintains that their use in any case is just cause for a malpractice complaint. My own practice has been to routinely use dicumarol in all proved cases of coronary thrombosis provided the patient would remain under hospital care and laboratory observation. I have had no occasion to regret this practice and feel that it has resulted in a marked reduction of mortality following coronary thrombosis.

We have had no experience and contemplate none in the use of anti-coagulants in ambulatory patients for whom a dose of 50 to 75 milligrams daily of dicumarol has been recommended for long continued use. I know, however, of one active physician who has taken dicumarol for five years following a coronary occlusion.

One should not leave a discussion of anticoagulants without citing the imperative necessity of having a dependable laboratory do the prothrombin tests. It would seem preferable to have one individual in each laboratory assume major responsibility for all such reports.

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The Family Doctor*

J. O. SLAUGHTER, M.D.†
Columbus, Miss.

THE ONLY justifiable reason for my being on this program would be my profound admiration of and my sincere respect for the medical profession. Personal circumstances in my life impels me to an even deeper affection for that exponent of the profession known to the layman as the "family doctor." We meet to honor Dr. Green and the memory of Dr. Stone here tonight, in recognition of fifty years of tireless humanitarian efforts to alleviate the suffering and balm the hearts of their fellowmen. In my approbation and praise for these worthy patriots, I shall not in anyway detract from the physician of today; however, the subject could not be discussed without a reference of contrast. Surely, we all cherish the memory of those loyal souls who have gone before us; likewise, as is evidenced here tonight, we shall not be derelict to our conscience in failing to give expression of profound appreciation to those whom we are fortunate yet to have with us. Fittingly, I think, is the expression of Benjamin Franklin "A rose to the living is more than wreaths to the dead." Hence, we present the "fifty-year" certificate as a simple token of admiration and respect, given from both contemporaries in the profession and the appreciative citizenship with whom they have labored long and well.

I challenge you to show me the man closer to the hearts of his fellowman than the "family doctor." Show me the individual in whom you place a greater confidence, a confidence that is never betrayed. I can see the "family doctor" as he "stays and waits" in the vigil of night, with a loved one lingering between life and death. In him you have placed the fate of that which means most in life to you. In these hours of sorrow your "family doctor" comes close to being some symbol of deity. I view the family doctor as that individual who balms the heart and soul of our mothers, who were willing to go through the valley and shadow of death that we might be brought into the world. Hence, I view him as an individual who will companion us into the joy of life itself, and remain as such in the gloom of death. I can think only of the family doctor when I read one of Milton's sonnets, wherein he said, "They also serve who only stand and wait," while he abides in our home in hours of sorrow. Therefore, my friends, I find my vocabulary too limited to give full expression of my great love and appreciation for the "Family Doctor."

True it is, and I am sure those who have been honored into the Fifty-Year Club will agree, medical sicence has made its progress along with all other enterprises. The great impositions once made upon our family doctor are not now neressary. Yes, many of us reluctantly relinquish the old-time fellowship, and we are yet unwilling to concede that—that little intimate something that was evidenced by ties of genuine love and affection by patient and physician should ever be forgotten or abandoned. I am conscious of the rapid progress in medicine. I know that life expectancy has been increased by more than twenty years. The great profession of today should be saluted for their diligence and their accomplishments. We hope, however, that materialism will never supersede humanitarianism in the medical profession. When this is done our last vestige of hope for "free medicine" instead of "socialized medicine" shall have been removed. In our great strides in Mississippi to improve medical care, and provide adequate hospitalization for all of our people, I have repeatedly stated that it was the one plan that would most surely combat socialized medicine. Our great hospitals are owned and operated by the local communities. Our plan of helping worthy young men get a good medical education is, in my opinion, sound procedure. It, in fact, seemed the only alternative if we were to obtain the required number of doctors. It is appalling when we realize that fifty years ago we had 160 medical schools in the United States, with a total enrollment of 26,147 students and with a graduating class of 5,606. Today we have only 79 medical schools with a student body of only 23,670. Last June 5,095 students were graduated from these 79 medical schools. The population of these United States has nearly doubled in the last 45 years. It is significant to observe that 45 years ago there was one medical student to every 6 college students—today we have one to every 100. Yes, there is some reason for that situation; last year approximately 25,000 students applied for admittance to medical schools. Only 6,387 were accepted. In our state at present the average number of patients is in excess of 2000 per doctor; 50% are over 60 years. A smiliar situation exists in the dental schools—hence it becomes obvious that our anticipated medical school and teaching hospital is a necessity if we are to have a semblance of the needed doctors for our state. A commonwealth cannot long prosper if it continues to permit its doctor population to decline. A healthy citizenship is paramount to happiness and prosperity. Mississippi has definitely changed the trend. Through able leadership, started by the late Governor Bailey and his administration, and continued and encouraged by our present distinguished Governor Wright, we are leading the nation in many significant aspects of our medical care program. Our public health service, under the able leadership of Dr. Underwood, is viewed with admiration by the entire world. Under the able leadership of Dr. Boswell, we are conquering that dreaded killer. The 200-bed addition for colored patients at Sanatorium, built under our state hospital program will greatly relieve a dire need.

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†Member of the Mississippi Commission on Hospital Care.

*Given at the quarterly meeting of the Northeast Mississippi Medical Society, December 1950, on the occasion of the fifty-year award to Dr. J. H. Green and Dr. Stone.

Now, my friends, with apologies for a layman's limitation, let me talk with you briefly with reference to our doctor and medical care problems. It has been my privilege to work with leaders, businessmen and professional men throughout the state. They have discussed freely their feelings with regard to hospital and medical care. With but very few exceptions, you invariably hear that the problem and agitation for socialized medicine from certain quarters of our nation can be met only by the doctors and medical care people themselves. There must somehow be re-established that relationship—in part at least—that existed between the family doctor and his patient. There must be encouraged into the profession young men and women who have a genuine love for the profession, and the proper attitude of responsibility to the patient. As doctors you must never take up more time diagnosing the pocket book than you do the abdomen. Certainly, you are entitled to your just economic status in life. But to best attain that goal the element of humanitarian effort must be ever conscious in your mind and heart. Well do I know that you are not supermen. You can work so many hours in a day, but I do sincerely feel that the American public has seriously felt that there has existed too much jealousy in the great fraternity of medicine. I believe that the American people feel that it is too high a station in life ever to let any ideas creep in that would preclude the possibility of the patient having the best medical attention that was in the realm of attainment. Therefore, would it not be well that this greatest of all professions resolve now to reflect once more upon the Hippocratic Oath, and become a great brotherhood of humanitarians, whether you be surgeon, internal medicine or specialist. With that unity of effort and renewed confidence, in each other if you please, we will never see the day when "free medicine" is not preferred in our nation.

In 1915 a very dear friend of mine and yours, Dr. Jim Lipscomb of Columbus, Mississippi, made the following observations to the Mississippi Medical Society, with reference to the "family doctor."

> "Someone has said that, to be an ideal doctor, we must possess the wisdom of Solmon, the faith of Abraham, the meekness of Moses, the patience of Job, the charity of Joshua, the strength of Samson, the executive ability of a Jezebel, must be a hunter like Nimrod, a fisher like Peter, a climber like Zaccheus, a driver like Jehu. He should be free of Asa's gout, the melancholy of Saul, the gastric infelicity of Timothy; have all the virtues of the most virtuous and the religion of all saints. All of these are his."

Dr. Lipscomb presented Dr. Rudolph Matas, a noted surgeon, to the Mississippi Medical Society, 35 years ago. The message seems to have become legendary, and is recognized as "The Soul of the Surgeon." A paragraph from this great dissertation reflects the fact that Dr. Matas may have been imbued with a vision of things that might be anticipated, and that should be zealously guarded against—Although they are certainly not applicable to this audience, I am taking the liberty of quoting to you what one of your own great men said 35 years ago. He doubtless never thought of the common expression of today "Socialized Medicine," but he surely viewed such practices as a potential menace to the profession.

I quote:

"But while tainted money is the most frequent motive for the prostitution of surgery, there are other considerations which often lead a man of the art to sell his birthright and his decency for a mess of pottage. There are others, less base, who are insanely ambitious for reputation and prestige as marvelous operators; who, possessed of the furor operatorius, allow this vanity to eclipse their reason and their morals. These men will not hesitate to remove normal and inoffensive organs and endanger the lives of their fellows, solely to be quoted as wonderfully successfully operators. How easy for a man armed with a diploma, with some appearance, suavity and plausibility, to insinuate himself into the graces of a gullible and impressionable public, if he is the least bit intelligent but unscrupulous. How easy to multiply one's successes, with even a modest surgical training, by removing healthy organs, or operating upon them in normal individuals when the danger of complications and disastrous consequences are reduced to a minimum by the perfect conditions of resistance that obtain in healthy patients! How easy to swell one's statistics as a wonderfully successful operator, by shearing the wool of a lot of unsuspecting lambs, while they sleep."

Advances in the Treatment of Infectious Diseases*

L. L. McDOUGAL, JR., M.D.
Tupelo, Miss.

THERE has been great progress in the treatment of infectious diseases and even greater progress in the prevention. There are fewer people each year who wait until their child becomes desperately ill. The public is beginning to realize the old adage that "an ounce of prevention is worth a pound of cure." It is rare now to see children with diphtheria and whooping cough when only a few years ago it was almost a daily occurrence. Only a few years have lapsed since patients were visited in the home by horse and buggy and nursed through the day and part of a night with diphtheria or pneumonia. Our progress in treatment has been speeded up and made safer just as our transportation. It is a wonderful age in which to live and treat patients and know that a very high percentage will respond to the treatment. With our improved standards of living and close contacts there seems to be an increase in the number of respiratory infections and it is very fortunate that we have a host of new drugs with which to treat them. However, I believe that the more sensible heating of homes and dressing of the children would be a better preventative for colds than serums and drugs.

There remains many diseases for which we have no specific treatment but with the use of the sulfonamide drugs and the antibiotics, secondary infections and complications can be kept to a minimum, thus reducing the mortality and shortening the morbidity.

The use of the newer drugs alone does not always cure the patient. Good nursing care is still a most important factor and often the deciding factor. Fluid intake and fluid balance is and will remain important. Things like aspirin, alcohol sponges, ice bags to the head, hot water bottles to the feet, enemas, inhalation therapy and oxygen may seem trivial at times but make the patient more comfortable as well as enhancing recovery.

German Measles (Rubella). It is a mild disease and unless it occurs early (first three or four months) in pregnancy there are seldom any complications. Congenital cataracts or other abnormalities, as congenital heart disease, deafness or mental backwardness, occur in almost 50 per cent of offspring from mothers having German measles during this period.

Due to the danger to the fetus it would be well for all young girls to have the disease.

Immune globulin and pooled gamma globulin have been used with apparent success as a preventative.

Symptomatic treatment is all that is necessary for children and therapeutic abortion considered for women who have the disease during the first two or three months of pregnancy.

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*Read before the Section on Pediatrics at the eighty-second annual session of the Mississippi State Medical Association, Biloxi, Miss., May 9-11, 1950.

Measles. It is still regarded better to prevent infants and young children from having measles as the child's resistance increases and the attack is less dangerous as he grows older. Anemic and weak children or those just recovering from some other illness should be protected.

Complete or partial protection from measles may be obtained by the injection of graded doses of blood products as convalescent serum, parental serum and whole blood, gamma globulin or immune globulin, the latter being most commonly used in private practice. A very good preparation by Cutter can be obtained without expense from the Red Cross. Dosage for prevention—.1 cc. per lb. of body weight. Dosage for modification—¼ of this amount. The disease can be modified somewhat by giving the serum up to one day before the rash but the best results are obtained when it is given 4 to 7 days after exposure.

Every effort should be made to keep the patient from getting cold.

Routine administration of sulfadiazine or penicillin will reduce the number and severity of complications as otitis media and pneumonia. Both drugs are very effective in the treatment of complications as the streptococcus is the usual organism. In severe cases both drugs should be used. Cough medicine, epecac and a croup kettle usually take care of the cough.

Lumbar punctures, convalescent serum and supportive measures are about all the helpful measures in measles encephalo-myelitis.

Mumps (Epidemic Parotitis). Rest in bed by children for 1 day after freedom from fever is usually all that is necessary. Adults should remain in bed 2 to 3 days after all swelling has gone down. Convalescent mumps serum (40 cc.) cuts down the incidence of orchitis about 50 per cent and gamma globulin from pooled mumps serum even more, to as little as 8 per cent. Recent reports indicate that diethyl stilbestrol may also be of value in preventing orchitis in adults.

Some get more relief from cold than heat and vice versa.

Mumps encephalitis responds to lumbar puncture, sedatives and glucose, especially if there is considerable headache and vomiting.

Whooping Cough (Pertussis). Hyperimmune serum has reduced the mortality in whooping cough from 5 to 7 per cent to 1 or 2 per cent. Most centers favor human to rabbit. (Hypertussis by Lederle has been a very effective preparation). Bullowa and Alliman found this to prevent whooping cough even after exposure and with continuous exposure. Two injections of 20 cc. of hyperimmune serum at 3- to 5-day intervals should be given under these circumstances.

Penicillin and the sulfonamides do not help the pertussis infection or secondary virus infections but are effective against secondary organisms as pneumococcus and streptococcus.

Aureomycin is the antibiotic of choice at present. After 10 days' treatment the cultures become negative in a short time, the frequency of paroxysms is shortened, the duration of the disease shortened and the incidence of complications reduced. Aureomycin may be given per rectum by perforating the capsule or by mouth in the form of speroids.

Phenobarbital, paregoric and 25 per cent ether in olive oil has been helpful in relieving the paroxysms.

Patients without complications do better outside in the fresh air when the weather permits.

Frequent small thick feedings are retained best.

If vomiting is severe gastric lavage or pharyngeal and laryngeal suction may be necessary.

In the presence of pneumonia usually hyperimmune serum, antibiotics, oxygen, fluids and transfusions may be necessary.

Convulsions may be controlled by sodium luminal but lumbar punctures may be necessary. Due to the frequency of tetany, blood calcium studies should be made and adequate vitamin D and calcium administered.

Chicken Pox (Varicella). Aureomycin has been found to be effective against certain rickettsial diseases, bacterial and viral infections but it is not effective in shortening the course of cutting down on the complications of chicken pox.

Although there are seldom complications, the finger nails should be kept very short and the patient discouraged from scratching or picking. If itching is present, calamine lotion or calamoin ointment will give considerable relief. In severe cases penicillin or sulfadiazine may lessen the secondary infection.

In December 1949 I had a patient to have symptomatic purpura with chicken pox. There was marked bleeding from the nose, mouth and intestinal tract. He responded to three small transfusions, ascorbic acid and penicillin. There was no previous history of purpura and none since.

Convalescent chicken pox serum and immune globulin (same as used in prophylaxis of measles) has been used to prevent the spread.

Diphtheria. The most important part of the treatment is the early administration of serum. A few hours are often the difference in life or death.

Intravenous serum acts much quicker. In acutely ill patients it is well to divide the dosage, giving one-half I. V. Most patients are dehydrated and the serum can be given with 10 cc. of glucose per lb. of body weight in small children. Intravenous injection gives immediate circulation of antitoxin. Before any serum is given a test for sensitivity should be made and careful history of allergy in the family obtained.

The dosage may be figured 100 to 500 units per kg. depending on severity. Usual dosage—

Mild	10,000 - 20,000
Moderate	20,000 - 40,000
Severe	40,000 - 80,000

Larger doses are seldom helpful and the introduction of extra foreign protein may be harmful.

Post diphtheritic paralysis has been helped by the administration of large doses of antitoxin.

Complications of secondary infections of diphtheria may be treated with penicillin, the sulfonamides, etc. The number of carriers may be lessened with penicillin.

Circulatory failure may be helped with glucose, adrenalin and pituitrin.

Croup. Keep the air moist with a spraying or steaming device. Oxygen may be necessary.

If signs of laryngeal increase, suction or incubation may be done in the hands of a skilled attendant.

Laryngeal suction with direct laryngoscopy has saved many tracheotomies.

If cyanosis persists or recurs frequently tracheotomy should be done.

There should be bed rest for a minimum of 12 to 14 days in mild cases as the toxin affects the heart even in the mildest cases. More severe cases should be kept quiet for six weeks to two months, using sedatives if necessary.

Scarlet Fever. The serum is effective in counteracting the toxic manifestations and to a less extent in preventing complications. For the average case 9,000 to 18,000 units of antitoxin are sufficient.

Convalescent pooled serum has been used with varying results.

Sulfadiazine is effective against some strains of the streptococcus of scarlet fever.

Penicillin is a much better remedy. It cures the infection and prevents the carrier's state. Penicillin should be continued for 4 to 5 days after afebrile.

In severe or toxic cases (patients who appear toxic or have over 103° temperature) a combination of serum and penicillin is ideal.

The giving of penicillin and sulfadiazine through the course of the disease is the best protection against complications.

Erysipelas. After the use of sulfonamides in 1937 and 1938 other forms of treatment were dropped. Serums, light treatments and ointments in general became unnecessary. A more rapid response is obtained by giving the initial dose subcutaneously. One to one and a half grs. per lb. per day should be given until the temperature is normal and continued for several days to prevent possible abscess formation. Sulfanilamide was the first to become generally used but several of the less toxic drugs as sulfadiazine are also very effective. Very good results have been obtained with penicillin. Combined therapy is very effective.

Bacillary Dysentery. The fluid intake and fluid balance as well as the diet are very important factors in the treatment of this disease. This has been discussed in a previous paper. Of the sulfonamides used, sulfadiazine has stood the test of time and proved very satisfactory. A high blood and stool level can be obtained very rapidly. One grain per lb. of body weight per 24 hours should be given. Except for severe and toxic cases after 1 or 2 days this may be cut to ½ gr. per lb. of body weight. This should be continued until the stools are normal and where possible until the culture is negative. A very palatable preparation for young children is cremo-diazine or glucodiazine.

Serum therapy is seldom necessary except in shiga infections.

Foot and Mouth Disease. The treatment is symptomatic. Prophylactic treating is boiling or pasteurizing milk and cooking meat.

Infectious Mononucleosis. The associated infection would be treated with penicillin or other drugs. If the course is prolonged the patient may be benefited by transfusions from persons who have had the disease. Chloromycetin has been reported as shortening the course of the disease.

Vincent's Angina. The spirillum is very susceptible to penicillin which is secreted in the saliva when given parenterally. Local treatment with penicillin as troches or painting with the solution. Pockets in teeth, gums or tonsils should be cleaned out to prevent bleeding. Other local treatments which have been beneficial are hydrogen peroxide, chromic acid, arsenical solutions. Raw or denuded areas heal nicely with occasional application of 5 per cent silver nitrate.

Meningitis and Poliomyelitis. These are being discussed in separate papers.

Respiratory Infections. Respiratory infections as tonsillitis, otitis media, pneumonia, etc., generally respond well to sulfadiazine or penicillin and only after they have failed to respond or there is obvious evidence of a virus or influenza bacillus infection should aureomycin or streptomycin be added. Allergic reactions should always be kept in mind. Sulfadiazine and penicillin properly used are very valuable in preventing respiratory infections as in rheumatic fever, otitis, kidney diseases, etc.

With the large number of sulfonamides and antibiotics available a physician must be very careful in selecting the one most effective for the disease being treated. All advertisements of drugs should not be relied on any more than for other articles. They won't cure everything claimed.

Tetanus. Tetanus is still treated with antitoxin (up to 300,000 units) and sedatives. Antibiotics have not been of value.

Tularemia. Tularemia responds better to aureomycin than streptomycin or chloromycetin.

Brucellosis. Brucellosis is also most effectively treated by aureomycin and in resistant cases should be combined with streptomycin.

Amebiasis. Amebiasis has been treated successfully with aureomycin and only a small percentage of recurrences have been reported.

Virus pneumonia, herpes zoster and many penicillin resistant staphylococcus infections have also been successfully treated with aureomycin.

Typhoid Fever, scrub typhus, Rocky Mountain spotted fever and many rickettsial infections respond better to chloromycetin.

Terramycin, a newer antibiotic, is reportedly less toxic than streptomycin, chloromycetin or aureomycin and covers a wide range of infections — as pneumococcus, streptococcus, bacillary infections, urinary infections, brucellosis, pertussis, syphilis, gonorrhea, lymphogranuloma, primary atypical pneumonia, herpes zoster, typhus and amebiasis.

The price of the drug though not as high as some others is still out of range of a large percentage of our patients.

In general I believe that these newer drugs and antibiotics should be tried thoroughly in medical centers before being used extensively in private practice.

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Discussion

Dr. H. F. Garrison (Jackson)—I am very glad indeed to have the privilege of discussing Dr. McDougal's paper on this most important subject. Dr. McDougal's paper is to the point and brief in the discussion of each subject mentioned. Naturally, it is impossible for him to have covered the entire subject of "Treatment of Infectious Diseases" or to mention all of the infectious diseases, and yet he has covered the subject in a very fine way. The time that is allotted one to discuss a paper is so short, it is therefore impossible to cover the many points of prevention and treatment of these diseases.

In the beginning, allow me to say that what Dr. McDougal had to say in regard to the prevention of infectious diseases is probably the most important phase of the paper. Far too many physicians in active practice are neglecting the preventive measures that are available now for the prevention of many of the diseases mentioned. We frequently see many cases where, for reasons unknown, a child has not had the proper preventive measures, and as a result, suffers some very serious consequences. I think the physicians and the public all over the country should be reawakened on the value of preventive measures of these diseases. In spite of the publicity given and the active support of the physicians as well as the public health department, there is today entirely too much neglect on preventive measures.

We will comment only on a very few points brought out so ably by Dr. McDougal: the prevention and treatment of whooping cough, measles, diphtheria, scarlet fever, and respiratory infections, typhoid and other rickettsial diseases. Virus infections are very much in the limelight right at the present time, and apparently very little can be done except by isolation or prevention. We are hoping in the near future to have other remedies which are apparently in the making at the present time. The two most valuable treatments of whooping cough should be especially emphasized as mentioned by Dr. McDougal—aureomycin and more recently chloromycetin, have proved to be very valuable drugs. The hyperimmune serum is of considerable value in the treatment of whooping cough.

The treatment of diphtheria is more easily controlled now than ever before. The concentrated diphtheria anti-toxin in doses of 20,000 units, together with penicillin spray or swab, will cure practically all cases of diphtheria in a very few days. Of course, the more severe cases of laryngeal diphtheria may need a more vigorous treatment by the intravenous route together with small transfusions and fluids. It is almost a regular treatment of ours on first seeing these cases in the office to give them 20,000 units of diphtheria anti-toxin intramuscularly and a spray of 200,000 units of penicillin together with 300,000 units of penicillin in oil intramuscularly, and tell them to keep me posted about the child from day to day, and never see them again until they are discharged by the public health officer. We have had our experience with the administration of scarlet fever anti-toxin or serum, and it is not now our practice to give it at all. The only thing necessary in the treatment and prevention of scarlet fever at the present moment seems to be the administration of the sulfonamides for the prevention and treatment, and also the administration of penicillin. As a general rule, the average case of scarlet fever will be well in three or four days, by this method of treatment, and the disease may be prevented by the administration of the sulfonamides.

The respiratory infections respond fairly well to penicillin combined with sulfonamides, aureomycin and chloromycetin, the two latter for the virus types. The rickettsial diseases including typhoid respond very dramatically to the administration of chloromycetin.

We wish it were possible to cover more thoroughly all of the subjects mentioned by Dr. McDougal, but in closing, we would just like to emphasize again and again and again the importance of prevention. Every doctor's office should be a station for the prevention of diseases. Every health officer and every physician in Mississippi should be alerted again on prevention. It is nothing short of marvelous the drugs that we have at the present time for the treatment of all of these diseases, and more and more are becoming available each day, that we physicians who are practicing medicine at the present time should feel very thankful for the researchers who are providing us with various medicines for the prevention and treatment of these diseases.

Tuberculosis is the most prevalent disease in China. In the city of Peking, with a population of about 2,000,000, the number of deaths from tuberculosis is about 4,600 a year. For the whole nation, with a population of 450,000,000, the total number of deaths from tuberculosis is about a million annually. In other words, about twice as many people as live in Minneapolis die from this disease each year in China. Most of the tuberculosis patients are between 20 and 30 years of age, the most productive period.

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The Mississippi Doctor

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Editorials

AMA FOUNDATION

For various reasons we have had a shortage of doctors for several years, not in comparison to other nations, but because our people have learned to utilize the best in medical science for human efficiency and bigness of living in the march of our civilization. Our nation is the big brother of the world and we have a doubled responsibility, which obviates a continued demand for doctors, just as its demand excels other nations for automobiles and other machinery. Our doctors are calling for more and more postgraduate work recognizing how imperative it is to keep their medical knowledge liquid and in usable form. We must prepare to take care of other doctors from other nations who eventually might come to America for their postgraduate work. This gesture will make for better world-wide human relations and will be a powerful force for world peace, after the divine pattern for human ethics.

Increasing demands and opportunities are causing our medical schools to stagger and all but fall. We need a few more medical schools, need to increase the capacity of others, and to add to the efficiency of all. Endowments are shrinking, the cost of medical education is increasing, large individual incomes seem to be on the way out. The time seems to be at hand when the rank and file in the medical profession and friends of medical schools should come together and make our medical schools more efficient with modest sums. The American Medical Association has set apart a half million dollars to support medical schools and is calling on the medical profession and friends of the medical schools to contribute one hundred dollars per year or more to medical education. The trend has been to let Uncle Sam or one of our states to hand it out. But money is becoming cheaper and processing allotments through the government so costly it is impossible to procure sufficient means with which to carry on.

In the South we have farmers who sell their hogs and buy the meat back from Chicago, sell their corn and buy meal from other parts of the nation, ship cotton to England and buy the manufactured goods back. When they come to their senses they will produce the needed goods at home, process them at home and utilize them at home. To a certain degree we need to think of our medical schools in the same way, need to produce our doctors at home, educate them at home and utilize them at home. If every doctor in the medical profession could contribute one hundred dollars per year as suggested by the American Medical Association and keep it up, such a policy would soon do wonders for our medical schools. Also practicing physicians would feel like having more to say about the type of teaching done in the schools. No one group can do more for world democracy than the medical profession or for the onward march of civilization. If we would put first things first we could have the money to do what the American Medical Association has suggested.

The ten billion dollars spent annually for whisky could take care of our medical schools in fine order. When this whisky is utilized as a beverage it costs the nation a hundred billion in crime and inefficiency.

The best security against state medicine is efficient service on the part of the doctor rendered in a kind and interested manner. Kind hearts are more than dollars. The doctor must be interested in the individual patient in all of his relations to life, and have as his aim the building of citizenship adequate to meet all of life's demands.

Dr. B. S. Guyton, president of the Mississippi State Medical Association, recently sent out a questionnaire to every doctor in the state. Each doctor was asked to voice his attitude toward state medicine by stating whether he favored it and whether he would practice under it if it comes. The doctor did not have to sign his name. However, Dr. Guyton advises that he has heard from only about one half of the doctors. This was just a simple request. It was asked by our president, a very able and a very reasonable man. If you can find your card fill it out and send it to him right away. If you can not, ask for another. Let us comply with this request.

The Mid-South Postgraduate Medical Assembly will meet at the Peabody Hotel, Memphis, down in Dixie, beginning February 13 for a four-day session. Our fine President, Dr. Price, splendid secretary, Dr. Thurman Crawford, and able program committee are presenting a fine list of essayists. They have spared no efforts that the ones who attend the meeting might be the beneficiaries. The Mid-South covers well the latest and the best in the field of medicine and surgery both for the general practitioner and the specialist. It has been most popular for many years. You can ill afford to miss it. Memphis is a fine medical center and the doctors of this city are most cordial. The fellowship can not be surpassed. The men on program are nationally known authorities on their subjects, and we should show our appreciation by a fine attendance. We are grateful to the exhibitors also for their aid in carrying on this great assembly. The past presidents will have their night and it will be fine. Let us meet at the Peabody, in Memphis, on February 13.

No greater discovery has been made for the benefit of man than ether as an anesthetic. To whom this honor belongs has been controversial for more than a century. Long, Morton, Jackson and Wells were the contenders. Dr. Frank Boland of Atlanta has recently written a book, *The First Anesthetic,* for which he deserves much credit, and for which the people of the South should be very grateful. It is enlightening and convincing to all who love truth and justice.

Proof enough to leave no doubts is presented to show that Dr. Crawford W. Long operated on James W. Venable who lived near Jefferson, Georgia, on March 30, 1842. He removed a tumor using ether as an anesthetic. He subsequently operated on others. The indications are that Jackson picked up this information soon after the first operation and he carried it to Morton.

Dr. Boland's book is logical, fascinating and readable. In this book Mrs. Frances Taylor plays an important role. A Mississippian for many years, she was the wife of Dr. Marcus Taylor of Booneville. The Taylors were a very distinguished family in medicine. The late Dr. Frank Taylor was a nephew of Dr. Marcus Taylor. His daughter, Mrs. Milton Adams, lives in Memphis. Mrs. Frances Long Taylor lived in Booneville many years after the death of her husband, with her sister, in the columned family residence.

It seems from Dr. Boland's book that Mrs. Long had the benefit of ether as an anesthetic when Mrs. Frances Long Taylor was born.

From Dr. Boland's book, it would seem that Dr. Crawford Long was a doctor of fine character, possessed of superior propensity for observation, deeply devoted to his profession and the desire to serve humanity. Every doctor in the South will thrill to the story of his life as told by Dr. Boland.

The book is published by the University of Georgia Press. Within the last year now two sons of the South have given us two books that will forever live and inspire in medical literature—*Woman's Doctor* by Dr. Seale Harris, the life and work of Dr. Marion Sims, and *The First Anesthetic,* by Dr. Frank Boland. Congratulations and appreciation to both of these medical literati.

CANCER MEETING CANCELED

Due to the extreme weather, with roads hazardous with travel, the third biennial meeting of the American Cancer Society, Mississippi Division, scheduled for February 7 and 8, in Jackson, Miss., was canceled.

Mrs. Elizabeth N. Wates, state commander, advises that the executive board meeting will be held in Jackson in May, as usual.

THE MID-SOUTH INVITES YOU

The Mid-South has served well and in a way somewhat different. Its purpose has been to review the latest in medicine and surgery in a four-day course. It also has been of the opinion that there should be a broadening influence in a medical association where all could come together and listen to the same lecture at the same time with profit. There are certain fundamentals about any disease that should be in some measure understood by all. The general practitioner needs to know when he needs to refer a case to the specialist and to whom it should go. The specialist needs to know the thinking and the problems of the general practitioner.

This year we should have a fine meeting. Dr. Julian Price of Dyersburg, Tenn., a courtly Southern gentleman of the old school, pledges his best as president to make the meeting exceptional. Secretary Thurman Crawford with his program committee has been on the job securing the best essayists the nation affords.

PAST-PRESIDENTS CLUB

The Past-Presidents Club of the Mid-South Postgraduate Medical Assembly was organized by Dr. Lawrence W. Long of Jackson, Miss., in 1939. Dr. Long, president that year, who believed that men who had served the association in this capacity might still offer constructive help to the organization, as well as perpetuate in a fine fellowship.

The past-presidents maintain a keen interest in the life and the work of the Mid-South. Living members of this group are: **Arkansas**—Dr. Allen Cox, Helena; C. W. Harwell, Oceola; F. L. Husbands, Blytheville; Fay H. Jones, Little Rock; P. W. Lutterloh, Jonesboro; Chas. Lutterloh, Hot Springs; H. King Wade, Hot Springs; Hoyt Allen, Little Rock; **Tennessee**—Jere Crook, Jackson; J. L. Dunavant, Ripley; A. G. Hudson, Memphis; Max Lindsay, Spring City; Dr. Julian Price, Dyersburg; **Mississippi**—J. W. Barksdale, Jackson; Lawrence W. Long, Jackson; V. B. Philpot, Holly Springs; Frank M. Acree, Greenville; and W. H. Anderson, Booneville. These make a total of eighteen, counting Dr. Price who is now serving. To follow Dr. Price as president is Dr. John Archer of Greenville, Miss. He is one of our active leaders in organized medicine in Mississippi. He is a fellow in the American College of Medicine. He loves the practice and he possesses fine medical integrity. He will make a splendid president.

At the Mid-South you can help and can be helped. It furnishes a superb fellowship.

THE PRESIDENT

DR. JULIAN PRICE

Dyersburg, Tennessee

Born in Collierville, Tennessee, in 1886, Dr. Julian Price has given all the years of his life to preparing for and delivering a better service to the people of his state. He attended the University of the South at Sewanee and University of Tennessee at Memphis, where he received his degree in 1908. After an internship in the Presbyterian Hospital in Memphis, he located in Dyersburg. Postgraduate work in Chicago, New York, New Orleans, and Mayo Clinic has kept him abreast of his time.

For ten years Dr. Price was president of the Dyersburg General Hospital, which was consolidated with Baird-Brewer Hospital where he has maintained a staff membership since 1928.

Dr. Price has been a fellow in the American College of Surgeons since 1927. He served as president of the West Tennessee Medical Society in 1948 and president of the Tri-County Medical Society in 1949.

DISSOLVING SURGICAL PADS

Many a patient has worried about the possibility of the surgeon's leaving a gauze pad in his stomach. Now the Department of Agriculture's research laboratory at Peoria, Illinois, has developed a surgical sponge made of starch material which may be safely left in the stomach. The sponge turns to sugar in the body cavities and is absorbed by the body.

News and Comment

GENERAL PRACTICE GROUP AND MEDICAL SCHOOL FACULTY COMPLETE PLANS FOR SIX-DAY LOS ANGELES MEETING

A telegram from Dr. Elmer Henderson, president of the American Medical Association, accepting an invitation to keynote the Assembly, completes the program of the annual Postgraduate Convention, sponsored by the Alumni Association of the School of Medicine of the College of Medical Evangelists. The six-day meeting, planned especially for general practitioners, will be held in the Biltmore Hotel in Los Angeles, March 11 to 16, 1951. Other of the featured speakers are Drs. Alton Ochsner, Chester S. Keefer, M. M. Wintrobe, and Col. William Stone.

The national meeting of the American Society of X-Ray Technicians will be held at the Benjamin Franklin Hotel in Philadelphia, Pa., June 3-8. The American Registry of X-Ray Technicians and the American Society of X-Ray Technicians are very anxious to acquaint all doctors with just what the two organizations are, their aims and ideals.

WALLACE SANITARIUM STAFF

The Wallace Sanitarium at Memphis has elected the following staff officers for 1951: chairman—Dr. Bland Cannon; vice-chairman—Dr. Charles Miller, Jr.; secretary—Dr. James A. Wallace.

AMERICAN COLLEGE OF ALLERGISTS

This year the College is trying for the first time the experiment of offering an extremely practical course designed for any physician who wants to learn the basic principles of diagnosis and treatment of allergic individuals and techniques that are useful in the management of these patients. A fee of $35.00 will be charged for the three-day course lasting through February 9-10-11. For further information and registration write Fred Wittich, LaSalle Medical Building, Minneapolis, Minnesota.

ARKANSAS NEUROPSYCHICTRIC MEETING

Dr. Harold W. Sterling, manager, has announced that the Third Annual Neuropsychiatric Meeting will be held at the Veterans Administration Hospital, North Little Rock, Arkansas, on March 1 and 2, 1951. This hospital, which was opened in 1921, will be observing its thirtieth anniversary year at the time of this meeting and many former staff members are expected to return for the occasion. A number of nationally known figures in neuropsychiatry and related fields have accepted invitations to participate. These include Dr. Harold G. Wolff, New York, New York; Dr. Jules H. Masserman, Chicago, Illinois; Dr. Edwin F. Gildea, St. Louis, Missouri; Dr. Harvey J. Tompkins, Washington, D. C.; Dr. Edward D. Greenwood, Topeka, Kansas; Dr. Saul Rozenzweig, St. Louis, Missouri; Dr. Edward J. Stieglitz, Washington, D. C.; Dr. Crawford N. Baganz, Lyons, New Jersey; Miss Elizabeth S. Bixler, Dean, Yale University School of Nursing, New Haven, Connecticut;* and Rev. Harold Wilke, Chicago, Illinois. In addition to lectures by the above named speakers there will be many professional exhibits and clinical demonstrations having to do with the hospital and its varied diagnostic and therapeutic activities. There will be a special conference for nurses on February 28, 1951, and psychologists and social workers will have sessions primarily of interest to members of their respective professions at regular intervals during the meeting.

There will be no charge for registration and attendance of all interested professional personnel will be welcomed subject only to limitations of seating facilities.

SE HOSPITAL CONFERENCE

Mark your calendar now for April 4, 5, and 6, 1951, the dates of the Southeastern Hospital Conference, to be held in beautiful St. Petersburg, Florida, where hotel accommodations will be available at convention rates at the Soreno and the Vinoy Park Hotels. All exhibits and general sessions will be held on the Municipal Pier overlooking Tampa Bay which is only a short distance from the hotels. While the Vinoy Park will be the meeting headquarters, reservations should be made through the Soreno.

ANNOUNCE CHANGES

Hoye, Sanitarium, Meridian, Mississippi, announces change of ownership and of additional facilities.

This institution has been acquired by C. Earle Johnson, Jr., M.D., F.A.P.A., Comdr. (M. C.), U. S. N. R., Ret., a diplomate of the American Board of Psychiatry and Neurology with certification in psychiatry and a Fellow of the American College of Physicians.

The mission of the Sanitarium is the treatment and rehabilitation of nervous and mental, alcoholic, and addicted patients. Treatment methods include psychotherapy, electrocoma, diencephalic stimulation, deep and sub-insulin shock, distributive analysis, physiotherapy, and recreational therapy.

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*Miss Dorothy V. Wheeler, Director, Nursing Service, VA Central Office, Washington, D. C.

TWO BIRMINGHAM MEN ARE HONORED IN CUBA

Two Birmingham men were among five Americans honored January 14 in Havana, Cuba, for their contribution to the world's health.

They are Dr. Tom Spies, director of the Hillman Nutrition Clinic, and C. P. Loranz, general manager of the Southern Medical Association.

The two local men and their colleagues received the Carlos Findlay Medal for Public Health.

They attended a special institute on the uses of the drugs ACTH and cortisone being conducted for Cuban medical men by Dr. Spies.

Others receiving the award were Dr. Elmer L. Henderson, Louisville, Ky., president of the American Medical Association; Dr. George F. Lull, Chicago, Ill., Secretary of the Association, and Dr. Paul DeKruif, science writer for **The Reader's Digest** and a frequent Birmingham visitor.

ANNOUNCEMENTS

John W. Baird, M.D., announces the opening of his office for the practice of medicine and surgery, 514 Exchange Building, Memphis, Tennessee. Practice limited to dermatology and syphilology. Telephone 37-1047.

The Southwest Allergy Forum meeting will be held in San Antonio, Texas, April 8, 9, 10, 1951, at the Plaza Hotel. The members of the forum extend a most cordial invitation to any practitioner interested in allergy to attend this meeting. 3t

William F. Andrews, M.D., announces the opening of his office at 899 Madison Avenue, Memphis, Tennessee. Practice limited to general surgery and proctology. Telephones: office, 8-4882; residence, 48-9444.

BOOK REVIEWS

Doctor, Come Quickly, by Frank J. Clancy, M.D., published by Superior Publishing Company, Seattle, Washington, 1950. Price $2.95.

This 248-page book is written by a practicing physician in Seattle, Washington, who sits down to reminisce with a chuckle or sympathetic understanding incidents which happened through the early days of his practice in the roaring twenties, to the present. Too busy to write a book until illness reduced his hours at the office or on calls, he has at length accomplished something any doctor would take comfortable satisfaction in doing—an autobiographical account of himself and his patients.

The average physician will settle for a pleasant evening or two with Doctor Come Quickly, then send his copy around to his friends and patients. It is that uprofessional in diction and that wide in appeal!

Dr. Clancy thinks "Life is short enough at best and if one can go through it inflicting as little pain and discomfort as possible to others as humaly possible, he has lived a good life." He might have added, "and injected a merry note into his daily greeting and walk," he would have revealed the humor that runs in a charming vein through the book. Readers of this book will be ready for another by Dr. Clancy before he gets his materials collected.

DEATHS

DR. C. H. RAMSAY

Dr. C. H. Ramsay, 75, pioneer Laurel physician, died at his home there on December 4 after an illness of several months. He had practiced medicine for half a century.

Dr. Ramsay was graduted from the Atlanta College of Physicians and Surgeons in 1902, and licensed in Mississippi the same year.

He leaves his wife and three children, Dr. Tom Ramsay of New Orleans, Dr. Frank Ramsay of Laurel and Miss Miriam Rmsay of Laurel.

DR. M. W. WALDRUP

Rites were held for Dr. M. W. Waldrup, 88, prominent Laurel physician, who died December 26 at a local clinic following a lengthy illness.

Dr. Waldrup, a resident of Laurel for over 50 years, started his practice here in 1900 and retired in 1946. He was born September 30, 1862, and received his medical degree at the Louisville Medical College, Louisville, Ky., in 1896. Before coming to Laurel, he practiced his profession in Sandersville, small town 10 miles north of Laurel, where he married Miss Lula Lindsey in 1897.

One of the pioneer residents of Laurel, Dr. Waldrup took an active part in the city's growth. He was one of the founders of the Wallace Drug Company, Inc., assisted in establishing the Laurel's first hospital, the Jessie Gates hospital; was a vice-president of the Tate Company, mercantile establishment; and served the Laurel Cotton Mill and the Gilchrist-Fordney Lumber Company as company doctor. He was a member of the First Baptist Church of Laurel.

Surviving are two sons, Ray and Lindsey Waldrup; an adopted daughter, a niece, Mrs. D. P. Granberry; two brothers, Wilson Waldrup and A. P. Waldrup, and other relatives, including five grandchildren.

INTERPRETING MEDICAL LITERATURE

PEDIATRICS

HEMOPHILIA. A CLINICAL STUDY OF FORTY PATIENTS. Charles S. Davidson, Robert D. Epstein, George F. Miller and F. H. L. Taylor, Ph.D., Thorndike Memorial Laboratory, Harvard Medical School, Boston, Mass. Blood 497-119, Feb. 1949.

"This is a summary of the clinical manifestations and practical management of 40 patients with hemophilla, all 12 years of age or over, who have been followed during the last ten years. All were males. Most of the patients were of recent European extraction. There were no orientals or Negroes in the series, although hemophilia has been reported in both mixed and presumably full-blooded Negroes, and six probably authentic cases have been described in native Japanese.

There were no deaths in this series from acute blood loss, the popularly supposed cause of death in hemophilia, despite frequent tooth extractions and five relatively serious operative procedures. In 36 of the patients the first hemorrhagic episode was known. Three followed circumcision in the first two months (two at the age of one week). Eight had their first bleeding during the first year of life; 2 with a hematoma of the head from known trauma, 2 from cut lips, one with a hemarthrosis of the knee, one with a hematoma around the knees from crawling, one with multiple hematomata, and one in whom the precise nature of the bleeding had been forgotten. The remaining 25 patients experienced their first hemorrhagic episode before 13 years of age, 19 before 5 years of age. Excessive bleeding from primary dentition occurred in one instance, whereas 13 of 22 had excessive bleeding from secondary dentition. Hemorrhage following the extraction of permanent teeth is much more frequent.

A discussion is given of hemarthrosis, chronic hemophiliac joint disease, hemorrhage into the skin, subcutaneous tissue and muscles, hemophiliac pseudotumor of the bone, hematuria, pharyngeal and laryngeal hematomas, pulmonary and pleural complications, the acute condition in the abdomen in hemophilia, and the neurologic complications.

To control bleeding episodes it is wise to give human whole blood or plasma not over 24-hours-old, unless, in the case of plasma, it has been separated soon after phlebotomy and preserved in the frozen state. Sometimes the bleeding may continue even when the coagulation time is brought to normal with blood transfusions. For acute blood loss of significant proportions whether externally or into the tissues, fresh whole blood not only provides antihemophiliac activity but replaces the loss in both red cell and plasma volume. Plasma, fresh or frozen, is simpler because cross-matching is not required and it is as rich as whole blood in antihemophiliac activity. The reduction in coagulation time usually persists for six to twelve hours at the minimum and then the clotting time gradually rises to its pre-injection level in the course of another six to twelve hours. For continued effect on the coagulation time, blood or its products should be given once or perhaps twice daily during the period of active bleeding.

Fractionation of blood plasma has led to the identification of the antihemophiliac activity with the euglobulins and particularly with Fraction I, according to the nomenclature of Cohn et al. Fraction III-2 also contains considerable antihemophiliac activity, but is less practical to give. The fibrinogen Fraction I has been chiefly studied **in vivo;** it contains antihemophilic activity which is not due to fibrinogen itself. In the dosage recommended there have been no significant reactions. Two cases of hepatitis, probably transmitted with the administration of Fraction I. have been observed. There is a great deal of variability in the antihemophiliac activity of Fraction I as now available, and there are instances when fresh whole blood is more effective in reducing the coagulation time. A refractory state to blood and its derivatives has sometimes followed the repeated giving of blood, plasma, or the antihemophiliac globulin fraction. It arises during or promptly after hemorrhagic episode, although occasionally it is spontaneous. The exact nature of this refractory state is still obscure, but may result from production of antibodies to the antihemophiliac substance. "Presently available evidence suggests that this refractory state may occur more frequently following the administration of the antihemophiliac globulin fraction than following the administration of blood or blood plasma. The therapeutic use of the antihemophiliac globulin fraction cannot be advised, therefore, until further studies have eliminated this hazard." For use locally at the site of bleeding, thrombin is preferred as a coagulant because it directly converts the fibrinogen to form a fibrin clot. Thrombin prepared from both animal and human sources has been effective. The thrombin must be applied directly to the source of bleeding and held there by appropriate pressure dressings. If not, it will merely form a blood clot in the wound, keeping it open. Cautery is not advised. If an operation is needed, the free use of preoperative and postoperative blood transfusions and, when possible, the local application of thrombin are the only important additions to careful surgical technics.

When an acute hemarthrosis occurs in the lower extremity, bed rest is necessary. Compression bandages may be helpful. Aspiration of the fluid blood in the joint is not recommended. As soon as signs of reabsorption of blood appear, cautious active movement up to the point of pain may be begun and gradually increased.

Preventive therapy must begin in childhood as soon as the diagnosis of hemophilia is established. The nature of the disease must be clearly explained to the parents so that they will not only endeavor to prevent hemorrhages but will so orient, care for, and instruct the child that he will grow into as useful and productive a citizen as possible, for only in this way will he be well-adjusted and happy. The child must be taught independence and self-reliance. The hemophiliac patient is subject to frequent bouts of pain which automatically make him the center of attention within the family. Vocational guidance is needed also."

COMMENT: This is a very interesting article from the standpoint of research and rather an intensive type of study. It makes interesting reading and something to think about. Of course, it goes without saying that all of these cases are a tremendous problem and will tax the nerves and patience of any doctor. The main points suggested in this article are well worth consideration, and probably represent some new thought that is at least interesting if not of considerable benefit.

PEDIATRICS

Streptomycin Intramuscular Dosage Per Unit Body Weight Correlated with Serum Levels in Infants and Children, Andrew D. Hunt, Jr., and Mary B. Fell, Children's Hospital of Philadelphia and University of Pennsylvania, Philadelphia, Pa., Pediatrics 4:163-69, Aug. 1949.

"Clinical experiments were carried out with 18 children to note the serum levels of streptomycin achieved and maintained by intramuscular injections of varying amounts in infants and children, and to determine whether definite dosage per unit of body weight can be depended upon to produce predictable serum levels.

Following single intramuscular injections of 6.6 mg. of streptomycin per Kg. of body weight, the peak serum level was attained in one-half hour, and ranged from 11.5 to 27.0 yg. per ml. At the end of three hours, the level had fallen to between 4 and 9. By four hours, the majority of levels was less than 5y/ml; at 7 hours, less than 3. With single injections of 11 mg per Kg., the peak levels were higher, ranging from 27 yg. to greater than 35 yg./ml. The peak level seemed more prone to occur at one hour. At three hours, the levels were much higher than in the 6.6 mg./Kg. group, and at six hours were still above 5 yg./ml. With injection of 15.4 mg./kg. body weight, half the subjects had peak values greater than 35 yg./ml., but at three and one-half and seven hours, were not significantly higher than after doses of 11 mg./kg. With single injection of 6.6 yg./kg. given to newborn infants, the peaks at one-half hour ranged from 18.5 to 24.5 yg./ml., identical with the levels obtained in older babies and children, but the levels were maintained longer; at six hours the majority were greater than 5 yg./ml.

This delayed rate of fall in serum levels in the newborns may be explained by dehydration and consequent low urine output. When it is desired to maintain serum levels above 5 yg. over a period of therapy, a dosage of 11 mg./kg. body weight intramuscularly every six hours may be recommended as satisfactory for children."

COMMENT: This is a very interesting paper and one which would attract the attention of all of the doctors around the state. The points made in it are well taken and should be noted both from a physiological as well as a therapeutic standpoint.

VA PATHOLOGY

Present Illness: Patient, a 56-year-old colored farmer, was admitted to the VA Hospital, Jackson, Mississippi, in coma, and no history was obtainable. There was some information that patient became ill the day prior to admission.

Physical Examination: Fairly well developed, middle aged colored man, acutely ill and stuporous, with some evidence of recent weight loss. T. 102°; P. 95; BP 128/40.

Head: Non-indurated swelling on left side of jaw 1½ inches in diameter, slightly fluctuant, and apparently painful. **Chest:** Heart slightly enlarged, grade III systolic murmur all over precordium. No thrills or friction. Lungs: Bronchial breathing and moist rales medial to lower end of right scapula. **Abdomen:** Muscle rigidity making accurate palpation impossible. Tenderness in liver region. Palpation over free end of left twelfth rib crepitant and painful. **Back:** Circular area 1½ inches in diameter at right sacro-iliac joint, boggy, and crepitant on palpation and apparently tender. **Neurological:** Knee and ankle jerks normal; no Babinski. No abdominal reflexes. Pupillar reflexes to light absent; accommodation or convergence reaction not obtainable; fundus examination not possible.

Laboratory: Urine analysis: Negative. **CBC:** Hb. 9 gms.; 3.15; WBC 10.2 with 80% polys. **Serology:** Negative. **Sputum** shows gram positive diplococci. **X-ray:** Patchy infiltration throughout lungs, one large area in right middle lobe. Heart negative. Small destructive processes throughout bones of thorax, suggesting metastatic changes.

Course: Patient was placed on critically ill list and treated with penicillin, oxygen, digitalis, codeine, aspirin, and intravenous fluids. His condition became rapidly worse and he developed uremic frost. He expired five days after admission.

STATE BOARD OF HEALTH

FELIX J. UNDERWOOD, M.D.

PREVENTABLE DISEASE CONTROL

July 1 - November 30, 1950

by A. L. Gray, M.D., Director

ACUTE COMMUNICABLE DISEASE

Of the acute communicable diseases poliomyelitis continued with an unusual prevalence during the period July 1 through November 30, 1950. The total cases in the state for the year through November 30 had reached 376 and of these 307 were in the period July 1 through November 30. This indicates a late peaking of incidence. Already the state has experienced more polio in 1950 than in any previous year during the history of the disease in the state.

Some concern was developed in this period over the occurrence of what was apparently equine encephalitis in horses in Harrison and Hancock counties. Seven cases occurred in Harrison County, starting on September 26, the last known case appearing on October 11. Twelve cases presenting a picture of encephalitis are known to have appeared in Hancock County between the period September 19 and approximately October 5. This diagnosis was suggested by the local veterinarians and confirmed by the state veterinarian, and a Federal consultant from the Communicable Disease Center Virus Laboratory of the U. S. Public Health Service. A few years ago an outbreak of this disease in animals developed in Texas and has gradually spread through southern Louisiana and apparently into southern Mississippi. In Texas and Louisiana there was considerable spill-over into the human population resulting in several deaths. The situation in south Mississippi will be watched closely with aid as needed from the Virus Laboratory in Montgomery, Alabama.

Other diseases were not of unusual prevalence except typhoid fever. During the summer, typhoid fever showed some increase over the previous year. Typhus fever and malaria continueh the decline which had been evident for the past several years and apparently have almost reached the stage of complete eradication.

EPIDEMIOLOGIC INVESTIGATIONS

The consultant nurse and nurse trainees in communicable disease investigations continued a study of all suspected cases of typhoid fever, malaria, tularemia, brucellosis, and typhus fever, and did some studies on food poisoning and diphtheria. In this period, 39 suspected cases of these diseases were studied. In addition one outbreak of food poisoning was studied in conjunction with the local health department concerned. This outbreak consisted of 18 known cases and the vehicle causing the infection was apparently cream-filled pie contaminated with one of the Salmonella organisms.

During the period arrangements were completed through which the Division of Preventable Disease Control is acting as a field training center for consultant nurses in epidemiology for the Communicable Disease Center of the Public Health Service. Three nurse epidemiologist trainees who began their training in Communicable Disease Center in Atlanta were assigned to the Division for approximately two months for field orientation and training under the direction of the Director of the Division and supervison of a nurse epidemiologist, Miss Mary E. O'Connor. The trainees are: Miss Beatrice L. Zingle, Mrs. Jennie H. Rakich, and Mrs. Mary R. Lester. Each of these trainees will be assigned to a state communicable disease control division for similar work when their training is completed.

As of September 18, 1950, the Director of the Division was appointed as Consultant to the Communicable Disease Center by the Public Health Service.

VENEREAL DISEASE CONTROL

Venereal disease control is continuing to demonstrate the rapid decline in the total problem of syphilis. This is indicated particularly by the fact that the percentage of positive and doubtful serologies found on surveys is declining. The most significant indication of this decline is the marked decline in primary and secondary cases found by private physicians and health departments. For instance, in the period July to October, 1949, inclusive there were 528 cases of primary and secondary syphilis found while for the same period of 1950 there were 305.

Rapid treatment centers are continuing to serve as invaluable clearing houses in diagnosis, treatment, epidemiology, and education. The total number of admissions to rapid treatment centers in the period July through October, 1950, inclusive was 8,647 compared to 7,020 for the same period in 1949. This increased admission rate reflects the results of increased activities in surveys and other case finding procedures.

There are now in operation three special case-finding teams, financed for the most part with special funds allotted by the Public Health Service. During the period, surveys were completed or are now under way in Grenada, Yalobusha, Panola, Holmes, Claiborne, Jefferson, and Lauderdale counties. A total of 47,594 specimens were secured by these teams with 8.3% showing positive and doubtful serology.

In October, we were notified of a marked reduction in Federal venereal disease funds for Mississippi. This reduction has hampered the program to some extent, but it is anticipated that despite this reduction the downward trend of syphilis can be continued although with less rapidity.

Mississippi was selected from all of the southern states in which a study is to be conducted to determine the rate of production of congenital syphilis in the newborn of the Negro population. This study is being carried on in Washington and Sunflower counties with the cooperation of the local health departments and the Divisions of Preventable Disease Control, Public Health Nursing, and Public Health Statistics in the State Board of Health. The study began September 1, 1950, and will continue for one year. It is being initiated from birth certificates of all resident Negro births between May 1, 1950 and May 1, 1951, in the two study counties. Special investigation is to be made of all infants, and all other familial contacts, of mothers who have syphilis or who give a history of having had syphilis. The study has two prime objectives:

1. To determine rate of production of congenital syphilis.
2. To determine medical and public health deficiencies leading to occurrence of congenital syphilis in the newborn.

The U. S. Public Health Service assigned five nurses to the state for this study and is paying their salaries and travel. These nurses are: Miss Virginia Murphy, assigned to the central office for general supervisory work in venereal disease control, Miss Mary E. Allen and Miss Myra I. Johnson, assigned to Washington County, and Miss Mildred E. Barnett and Miss Hilda A. Nivala, assigned to Sunflower County.

Mrs. Josephine S. Watkins, Health Program Analyst, was assigned to Mississippi by the Public Health Service on September 18, 1950, to assist in conducting a congenital syphilis study and other control projects under way in the state.

CANCER CONTROL

Cancer control continued with increased momentum. During the four months' period July through November there were 588 suspected new cases admitted to the program for diagnostic and treatment service. In addition there were 808 post-treatment follow-up visits of patients to clinics. The increased number of patients and the increased cost per patient have brought about a deficit in funds available for this service. It is now apparent that funds in sight are only sufficient to continue the service program on the present basis until about May 1, 1951. This means that greater selectivity will have to be used in admitting patients for service.

The Division has cooperated and aided the professional educational sub-committee of the Cancer Committee of the State Medical Association and the American Cancer Society in promoting cancer seminars in the southern half of the state for private physicians. Seminars were held in three areas, namely: Brookhaven, Hattiesburg, and Meridian with a total attendance of 184 private physicians and dentists. These seminars have been conducted by teaching staffs from Tulane and Louisiana State University schools of medicine.

TUBERCULOSIS CONTROL

Within this period the services of the mobile units to the county health departments were redirected so that each department would be visited every three or four months for the purpose of x-raying selected groups of individuals such as food-handlers, teachers, suspects and contacts. This decreased the number of chest x-rays that must be made with 14" x 17" films, thereby saving a considerable amount in the cost of the films.

The mobile units visited a total of 71 counties out of 82 during the four months' period either for spot surveys or county-wide surveys making a total of 91,644 chest films of 70 mm. dimension. One visit was made to each of 29 of these counties, two visits to each 30 counties and three to each of 12 counties by the mobile units.

As of November 1, 1950, Dr. C. C. Smith, who has been Supervisor of the Tuberculosis Control Unit for many years, was employed by the Veterans Hospital in Jackson as a consultant in tuberculosis, discontinuing his full-time service with the Board of Health. By special arrangements with Dr. Smith and the Veterans Hospital, he is continuing on a part-time basis for a few months for the purpose of interpreting the films made in this control program. Ultimately, he will be employed full-time by the Veterans Hospital. Dr. Smith's leaving the Board of Health is a great loss to tuberculosis control in Mississippi and his replacement will be a most difficult task, since it is unusual to find an individual well trained in tuberculosis with a background in general public health work.

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STEADY GROWTH OF AUXILIARY INTEREST

In her visiting with various auxiliaries over the state, the president, Mrs. W. H. Anderson, reports favorably of steady growth and zeal for the work.

In the South Mississippi Auixilary Mrs. C. R. Jenkins of Laurel is doubling as president for this group and councilor for the Seventh District. Because meetings of the South Mississippi Auxiliary come only quarterly, effort is being made to form more units. Hattiesburg and Laurel, both large constituencies, with monthly local meetings can achieve much and keep the auxiliary agenda in up-to-date accomplishment. The December meeting of the whole group was exceptionally well attended and marked by a warm and enthusiastic fellowship.

A similar problem attends the North Mississippi Auxiliary, whose membership is so scattered and whose meetings are spaced so far apart, the organization is robbed of steady functioning. At the meeting in Oxford on January 4 Mrs. Chester A. McLarty was elected president, and the members moved to form county units to facilitate more frequent meetings and a fuller enlistment of doctors' wives. The Oxford meeting began with dinner with the doctors at the University Cafeteria, and the auxiliary gathered at the home of Mrs. Joe Rogers for the business session and a delightful hospitality afforded by the hostess.

One of the most consistently active groups in the state is the Lowndes County Unit which meets monthly in Columbus. In January the auxiliary met at the Golden Goose Tea Room on the M.S.C.W. campus for luncheon, and joined the afternoon assembly of the Citizens' Meeting, before which Mrs. W. H. Anderson talked and participated in an open forum. The interest of the lay people centered around a discussion of socialized medicine. Led by Mrs. B. M. Parkinson, this citizens' group exsts to promote the grass roots principles of freedom and individual responsibility in a democratic government. The plan is so fundamentally American, with the sole objective to preserving our country from the insidious workings of communism and the socialistic ideology, it has been adopted in other sections of the state. In this program of enlightenment and enlistment the medical profession and supporting organizations have an ally of potential power and effectiveness. The Lowndes County group is finding it a fine public relations opportunity.

Auxiliaries are urged to study local situations and evolve their own particular agenda for the remainder of the year—with one motive dominant: promoting and cultivating a better understanding between the public and the medical profession. It is very important that doctors' wives strive to bridge the gulf between the public and the profession with love and understanding. Let deeds which serve the community welfare be topmost on your list; then let them be publicized!

DOCTOR'S DAY

March 30 is the date most generally observed as Doctor's Day, although individual groups may find exceptions advisable. The purpose is to do something special to focus love and appreciation on our doctors on a designated day. Many auxiliaries have made elaborate plans for barbecue suppers, dances, dinners, Gay Nineties parties, and other novel ways of celebrating the day. A red carnation in each doctor's lapel is the countersign!

Carcinoma of Pancreas*

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SINCE Whipple, Parsons and Mullins in 1935 published a report on partial pancreatectomy for cancer of the head of the pancreas and Ampulla of Vater, an increasing interest has been manifested in surgery of the pancreas. In fact, it has until recently been unquestionably the accepted treatment for malignancies of this type with the results being much better for those malignancies of the Ampulla of Vater than for those of the pancreatic head.

As with most tumors, little is known of the etiology; however, it is twice as common in diabetics as in non-diabetics. It is no respecter of age; however, most cases occur in the fifth and sixth decades of life.

Clinically, cancer of the head of the pancreas differs sharply from that of the body and tail in that it produces early obstruction of the intra-pancreatic portion of the common bile duct with resulting jaundice of an intense type in 80 - 90 per cent of cases. Cancer of the Ampulla of Vater and the intra-pancreatic portion of the common duct produce the same symptoms as those of the head of the pancreas. Jaundice is the earliest symptom and is usually continuous and rapidly progressive, the patient being markedly icteric in a few weeks. Pruritis, acholic stools and dark urine follow. Anorexia, weakness and weight loss are later symptoms. An important finding, contrary to the accepted idea manifested in textbooks, is that actually most of these cases are accompanied by some degree of pain and thus it is not a progressive "painless" jaundice.

In addition to the above findings a palpable mass may be found in the gall bladder region, and this, of course, is due to a distended gall bladder following Courvoisier's Law which is a definite aid in differential diagnosis. In contrast to the symptomatology of lesions of the head of the pancreas, pain is the outstanding and often the earliest symptom of cancer of the body of the pancreas. It is usually upper abdominal, constant, and of girdle distribution about the lower chest and upper abdomen. Physical examination will reveal an upper abdominal mass which is fixed, and often large.

Laboratory tests are of little assistance except to indicate the presence of obstructive jaundice.

X-ray examinations may be helpful by suggesting the presence of a tumor by such findings as enlargement of the duodenal loop, indentation of the gastric or duodenal wall, or actual duodenal obstruction and mucosal irregularity.

Chronic pancreatitis is the most frequent entity mistaken for cancer of the pancreas and the most difficult to differentiate. It too may cause jaundice, upper abdominal pain, and a distended gall bladder. However, in most cases there will be a history of repeated similar attacks, and on opening the abdomen the pancreas will usually be firm to palpation and enlarged throughout. However, the diagnosis is frequently not so easy. On many occasions repeated biopsies are necessary and occasionally it will be necessary to take biopsies from the posterior surface after freeing the duodenum and pancreatic head on the right border.

Histologically, the malignancy is an adenocarcinoma which tends to spread at first by direct extension along the mesenteric vessels as well as the inferior vena cava causing early inoperability. Later spread to the liver, stomach and aortic nodes, as well as along the gastro-hepatic ligament, occurs.

Without treatment, the average period of survival after onset of clinical symptoms is extremely short, averaging six months for those lesions of the head of the pancreas. The results following palliative short-circuiting operations are but little better, as despite the remission of biliary and intestinal obstruction the survival period is but little increased. The results with pancreato-duodenal resection vary with the location of the tumor in the head of the pancreas; those which are located anteriorly to the head of the pancreas and which have not spread into the uncinate process should ideally give excellent results. The mortality rate overall is rather high, about 25 to 30 per cent, but when broken down is much lower for those cases done in the past five to ten years—7.7 per cent as reported by Brunschwig. From the Mayo Clinic a lower mortality rate for total pancreatectomy (17%) than for resection of the head of the pancreas and duodenum (28%) is reported with the explanation that little is added to the procedure when one removes the body and tail of the pancreas and the spleen; and this is certainly offset since it obviates any leakage or the formation of pancreatic fistulate from the pancreatic stump. Those who favor pancreatectomy feel that there may be small implants or other small primary foci of cancer in the remaining pancreas. The disadvantages lie in the metabolic changes produced causing diabetes which requires from twenty to sixty units of insulin daily, as well as six to eight grams of pancreatin for fat digestion and the maintenance of adequate nutrition. Cattell and Pyrtek (Lahey Clinic) state in a 1949 report that only seven of twenty-five cases, who had pancreato-duodenal resection, were living up to three years and seven months. They feel that this operation has not cured cancer of the pancreas and should be discarded and the more extensive procedure instituted.

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*Read before the Mississippi Division of the American College of Surgeons, Jackson, Miss., Sept. 22, 1950.

The contraindications to either of the radical procedures in an otherwise good risk patient are: 1) distant metastases, 2) involvement of the mesenteric vessels and/or the inferior vena cava, 3) regional node involvement is not always a contraindication since Brunschwig has two cases surviving at 2½ and 6 years who had regional nodes.

In both Jackson hospitals since 1942, there were records of thirty-three definitely proved cases of cancer of the pancreas. The operative procedures most commonly done in these cases were the palliative short-circuiting operations with or without biopsy. Four pancreato-duodenal resections were done.

Given a patient then who is intensely jaundiced and upon whom the laboratory procedures indicate that it is obstructive in type, we feel that a laparotomy should be done, being prepared to do a pancreato-duodenal resection. These patients are prepared for surgery with transfusions, vitamin K and bile, if the prothrombin time is below normal, and sweetened fluids either by mouth or parenterally, or both. The patient is operated upon under general anesthesia. The abdomen is opened through an upper abdominal midline or transverse incision. Upon entering the abdomen, inspection and palpation can soon determine if the liver, other visceral or peritoneal metastases exist. If metastasis is not apparent and there is a firm hard mass in or about the head of the pancreas and/or bile duct, biopsy should be done and a frozen section carried out. While the pathologist is doing this, the head of the pancreas and duodenum can be mobilized by incising the peritoneum along the greater curvature of the duodenum; this step aids in ascertaining whether or not the first portions of the portal vein have been invaded. If the biopsy tissue shows only chronic pancreatitis and the operator is still not satisfied, a biopsy may now be taken from the posterior surface of the head of the pancreas; by exercising patience, one can get tissue that will show the cancer. If invasion of the portal and/or mesenteric vessels is absent, the resection should proceed.

The chief differences in the operation as carried out at different centers are: 1) the site of anastomosis of the jejunum to the stomach, i.e., proximal or distal to the anastomosis of the common bile duct to the jejunum; 2) whether or not a jejuno-jejunostomy is carried out; 3) whether or not the remaining stump of the pancreas is implanted into the jejunum.

We elected in these three cases to follow the procedure advocated by Cole of the University of Illinois College of Medicine, i. e., proximal gastro-jejunostomy, occlusion of the stump of the pancreas instead of implanting it into the bowel, choledocho-jejunostomy in a loop of jejunum about a foot beyond the ligament of Treitz, and entero-enterostomy between the afferent and efferent loops. In our cases, we carried out the procedure as will be outlined to you now, except that in one case, we did not do the entero-enterostomy. Proceeding then from the stage where we mobilized the head of the pancreas and the duodenum, next the lower stomach is transected and the superior pancreato-duodenal artery is divided near the duodenal wall. The common bile duct is transected slightly below the level of the upper margin of the first portion of the duodenum. Next, the neck or proximal portion of the body of the pancreas is transected at the level of, or slightly to the left of, the superior mesenteric vessels. The pancreatic parenchyma is sutured with interrupted heavy silk mattress sutures that are not tied too tightly. The next step is a most tedious one, especially if there is any involvement of the vessels, for it is the separation of the uncinate process of the pancreas and third portion of the duodenum from the superior mesenteric vessels. The ligament of Treitz is then incised so as to free the duodeno-jejunal junction and to facilitate the transection of the jejunum distally. The jejunum is transsected a couple of inches distal to the ligament of Treitz and the lower segment closed with three purse-string sutures. The duodenum, head of the pancreas and lower segment of the common bile duct are removed. A gastro-jejunostomy is then performed by anastomosing the end of the stomach to the side of the proximal jejunum. The first long loop of the jejunum is then brought upward through or anterior to the transverse mesocolon for the choledochojejunostomy over a rubber catheter which was attached by one suture to hold it at the anastomosis and thus keep it patent. A jejunojejunostomy is then done between the afferent and efferent loops going to the choledochojejunostomy. A soft rubber tissue drain is applied to the site of the stump of the pancreas and the wound is closed. The procedures require three to six hours. Large amounts of blood are necessary. A report in brief of the three cases follows:

FIRST CASE: W. M., a 72-year-old colored male, was admitted to the Baptist Hospital after being seen in the Central Tumor Clinic that afternoon. He gave a history of abdominal pain more or less constant in type in the left upper abdomen, anorexia, loss of weight and weakness for three months; he had been in bed for two months. He had had some rectal bleeding for a few days. Physical examination revealed an elderly emaciated colored male who was markedly icteric. Pertinent findings were: Blood pressure 170/80; temperature 99.6°; pulse 100. The abdomen was firm and resistant to examination, with the liver being palpable, smooth and firm down to four or five finger breadths below the costal margin. Laboratory and x-ray procedures showed: hemoglobin 66%; RBC 3,660,000 with a volume per cent of 36; urinalysis normal; Wassermann negative; total protein 6.4 with albumen 4.2 and globulin 2.2. Serum amylase was 58 mgs. per cent. The icteric index was 112.8. Prothrombin time 50% normal. Upper and lower gastro-intestinal x-rays were normal. Twelve days after admission and the day before operation, after having had two blood transfusions of 500 cc. each, his hemoglobin was 87% and RBC 4,500,000; urea nitrogen 18.2; creatinine 1.5; sugar 103; and icteric index 191. The prothrombin time at this time was 100% normal. He was operated upon May 16 under general endotracheal anesthesia. All tissues showed marked jaundice; the gall bladder was markedly distended and tense. The common duct was markedly dilated to about 2½ centimeters in diameter. There was a stony, hard, irregular mass about the size of a small orange involving the head of the pancreas which was apparently fairly movable and not attached to other viscera. Later during the operation, however, we learned that the tumor was very intimately attached to the mesenteric vessels for about an inch of the vessel. No liver or other metastases were noted. Pancreato-duodenal resection was carried out, removing the pancreas up to the first portion of its body in the manner described earlier. It was impossible to remove one sliver of tumor tissue from the mesenteric vein. He received 1500 cc. of blood during the four and a half hour procedure and left the operating room in good condition. The pathology report was adenocarcinoma of the head of the pancreas, columnar cell type and probably arising from the pancreatic duct. The day after surgery, the icteric index was 38 and six days after surgery, the urea nitrogen was back down to 14.9. Post-operatively, he was given no insulin, and urinalysis failed to show sugar at any time. He did very well, the temperature peak being 100.4° on the seventh post-operative day. He had continuous oxygen and the Levine tube with Wangensteen suction for a week after operation; during this time, he had 3,000 cc. of parenteral fluids daily, two transfusions and streptomycin and penicillin. He did the bicycle exercise three times a day beginning the day after operation and was on his feet out of bed the second post-operative day. He was placed on a convalescent sippy diet ten days after operation and was discharged from the hospital June 1, fifteen days after surgery. He was seen at the Central Tumor Clinic one month later on a stretcher and stated that he was weak and did not eat well. He died on August 25, three and a half months after surgery. He did not have an abdominal draining sinus at any time to our knowledge.

SECOND CASE: S. E. B., a 54-year-old white male, admitted to the Baptist Hospital May 19, 1950, with a history of upper abdominal pain for a period of about three weeks. The pain was not very severe —more a feeling of fullness and a dull aching. He had noticed a slight jaundiced tint to his skin, that his stools had become lighter in color and his urine darker. The past history and family history were non-contributory. Pertinent findings on physical examination showed the liver to be palpable two finger breadths below the costal margin. The skin was moderately icteric and showed several scratch marks. Temperature was 99; pulse 100; blood pressure 120/80. Laboratory showed urinalysis negative; hemoglobin 70%; RBC 3,530,000 with volume per cent of 40; icteric index 42.7 with a direct Van den Bergh positive. The cephalin flocculation test was negative in 48 hours. Prothrombin time 100% of normal. On May 23, the day before operation, the icteric index was 52 and hemoglobin was 77%. A complete gastro-intestinal series was essentially negative; the chest was negative and the K.U.B. tract negative. He was operated on May 24. The findings were a hard tumor mass of the head of the pancreas about the size of a lemon which had invaded the vessels apparently. There was marked dilatation of the common duct. There was no evidence of metastasis to the liver. No palpable stones in the common duct and none in the gall bladder. Later during the operation, it was learned that the tumor was very definitely quite adherent to the mesenteric vessels. Biopsy of the head of the pancreas was done, and the frozen section report was adenocarcinoma. The head of the pancreas, the duodenum and the lower end of the common bile duct were removed in the same manner as described in the first case report. He was operated under general endotracheal anesthesia and given four pints of blood during the operation. He was in good condition when he left the operating room. The final pathology report was adenocarcinoma of the head of the pancreas with infiltration into the duodenum. The urea nitrogen on the third post-operative day was 24. The blood sugar on the sixth post-operative day was 109. Urinalyses for sugar from May 27 to June 10 were negative almost every time, but on occasion showed three plus. He was given insulin only when he had a drip of glucose. He was discharged on the twenty-seventh post-operative day on a soft diet with several small feedings daily. He was complaining of some abdominal pain at this time, but he was afebrile and his abdomen was soft. He was readmitted nine days later, was in the hospital for three days with fever of undetermined origin. He was readmitted again five days later with a complaint of upper abdominal pain and anorexia. At this time, there was felt a mass in his left upper abdomen and he was operated again on July 24, two months after the first operation. At this operation there was found a large cyst of the pancreas originating in the main body of the pancreas presenting behind the stomach and pressing it forward. There were numerous small hard yellowish-gray nodules in the gastro-hepatic ligament and two or three on the bowel and in the abdominal wall originating from a firm mass encircling the mesenteric vessels. Frozen section of these showed them to be metastatic carcinoma. The cyst was marsupialized; all metastatic cancer nodes that were visible were removed. He left the hospital August 22, some six weeks after admission, feeling better. He was admitted again in the early part of September and is in apparently dying condition.

THIRD CASE: A. J. W., 74-year-old white male admitted to the Baptist Hospital June 29, 1950, with a complaint of jaundice and a run-down feeling. The history was that for three or four weeks he had noticed himself becoming more jaundiced. He had had upper abdominal pain, not severe but definitely uncomfortable and with a feeling of fullness and indigestion in the upper abdomen. He had no appetite and had noticed weakness. All of these symptoms increased in severity. Physical examination showed his general condition to be good, with a blood pressure of 160/90; temperature of 98.6 degrees; pulse of 76. He showed moderate jaundice. There was slight epigastric tenderness. The liver was palpable about two finger breadths below the costal margin on deep inspiration. A plain film of the gall bladder region failed to reveal evidence of a stone and films taken after priodax failed to visualize the gall bladder. Laboratory: Urinalysis showed one plus albumen, occasional granular and hyaline cast; four plus bile; negative urobilinogen; hemoglobin 64%; RBC 3,000,000; volume per cent 32; Wassermann negative; prothrombin time 100% of normal; icteric index 50; urea nitrogen 27.2; creatinine; 1.5 sugar 102. On the day of operation, July 5, hemoglobin was 87%, RBC 4,410,000. This was after three transfusions of 500 cc. each. He was operated upon under general endotracheal anesthesia. The abdomen was opened through a long transverse incision. The findings at operation were a markedly enlarged gall bladder which was pale yellow in color. The common duct was markedly enlarged and dilated to about one inch in diameter and contained white bile. The liver was smooth but quite firm. The head of the pancreas was slightly enlarged, freely movable and quite hard. There was an area of marked induration along the body and tail of the pancreas on the upper border. A biopsy was taken from the anterior surface of the head of the pancreas just adjacent to the duodenum. This was reported as chronic pancreatitis. A second biopsy was then taken deep to the first and nearer the duodenum. Some cancer cells were seen in it. The peritoneum was then incised along the outer border of the duodenum and it was reflected to the left. Upon so doing it was determined that the head of the pancreas was freely movable and apparently resectable. Accordingly, a similar procedure to that done in the first two cases was carried out, with the exception that an enteroenterostomy was not done. This operation was much more easily accomplished than either of the other two, since there was no adherence of the tumor mass to the mesenteric vessels. The time on it was three hours and forty minutes. The patient received 1500 cc. of blood during the operation and left the operating room in good condition. The permanent section diagnosis was adenocarcinoma grade III of the head of the pancreas. Post-operatively, in so far as temperature, pulse, blood pressure and urine output were concerned. he did well, but his icteric index went up, as did the urea nitrogen, and he never did put out any bile. The day after operation, the urea nitrogen was 47.7, which was 20 above the preoperative level. On the third post-operative day, the urea nitrogen was 51.8, and the icteric index 80.4. During this time. he had no particular complaint and rested most of the time in a semi-stupor. On the fifth post-operative day, the icteric index was 114.9; the seventh post-operative day, 94.8, with a creatinine of 7.6 and urea nitrogen of 63.1 and a prothrombin time 93.3% of normal. On the ninth post-operative day, the day before he died, his icteric index was 84.9; urea nitrogen 47.7; total protein 5.92, with albumen of 3.91, globulin 2.01 and chlorides 322.5. On the eighth post-operative day, he eviscerated, the intestines and omentum protruding onto the abdominal wall. His general condition was so critical that I did the closure of the evisceration under bilateral intercostal novocaine block. This procedure did not seem to change his condition a great deal, and he became progressively, slowly worse and died three days later. Autopsy showed that all anastomoses were intact, there was no obstruction and no bile in the intestines. It showed also that his anterior coronary vessel was markedly sclerotic and almost completely obliterated but without thrombus formation. We feel that this patient died because his liver did not function post-operatively.

Summary

1. We have summarized briefly the current conclusions of leading authorities on cancer of the pancreas.
2. A brief description on cancer of the pancreas and its treatment is given.
3. Three cases operated recently are presented.
4. Our feeling is that these patients should be explored, biopsied and frozen section done, and when cancer is present and if at all resectable, i.e., without apparent metastases, a pancreatoduodenal resection should be carried out. We feel that since death in a few months is inevitable without operation, we are at least giving these patients a chance by performing radical surgery.

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Surgery of the Thyroid*

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SURGERY of the thyroid is a rather general heading for a discussion. However, this paper concerns surgical technique only and it is not intended to enter into any discussion of the thyroid other than this. Neither am I proposing to present anything original. This paper is based upon the pioneer work and teachings of Dr. Frank Lahey and his associates. Dr. Lahey has been kind enough to allow me to reproduce some Lahey Clinic plates which I will show as this discussion proceeds.[1]

Any operation upon the thyroid should be considered potentially dangerous because of the important structures in this region. It should be considered from the standpoint of morbidity as well as mortality. The structures in this region that have most often complications in the past are the recurrent laryngeal nerves and the parathyroid glands. The jugular veins, common carotid arteries, trachea and esophagus are also in the field of the operation. Injury occurs to these structures less often but it still may occur if careful surgical technique is not followed.

Since the primary concern is to avoid injury to the recurrent laryngeal nerve and the parathyroids, I will briefly discuss the results of injuries to these structures. Injury to the recurrent laryngeal nerves may cause interference with voice and interference with breathing. The effect upon voice has drawn more attention than the effect upon breathing. This is due to the fact that loss of voice is so dramatic and so impressive to the patient as well as to his friends while interference with breathing does not make such a dramatic impression. However, interference with breathing is usually more disabling than the injury to the voice and should therefore cause more concern.

The symptoms produced by injury to one recurrent laryngeal nerve may be so mild that immediately after operation, the injury may go unnoticed. However, there may be a marked temporary change in voice which is gradually overcome by compensation of the uninjured cord. The paralyzed cord gradually becomes shorter and becomes fixed in the median position, thus narrowing the glottic space. The voice will probably eventually be satisfactory but will lack its previous range as in shouting.

Injury to one nerve does not usually cause marked difficulty in breathing except when there is an unusual demand for air as after exertion. At such times there may be an audible stridor due to air being sucked through an opening too small to accomodate it. This is because the paralyzed cord is fixed in the midline and will not abduct.

Injury to both recurrent laryngeal nerves is a real tragedy. There is a complete loss of speech in the beginning which is what worries the patient most. However, the voice usually returns within five months. The reason for this is that the cords are relaxed in the beginning and will not abduct, adduct, nor tighten up. As time passes, the cords atrophy producing tension and bringing them closer together in a fixed position near the midline. This produces the voice.

Interference with breathing is not noticeable at first, but after a few months, it is marked. This is because the glottic space is so narrowed by the fibrosis of the cords that it becomes a very small opening. Any effort that requires a large amount of air will cause a crowing sound as the air passes through the small opening and the patient will have to stop what he is doing. Thus, the interference with breathing is to be feared much more than interference with voice. (Fig. 1.)

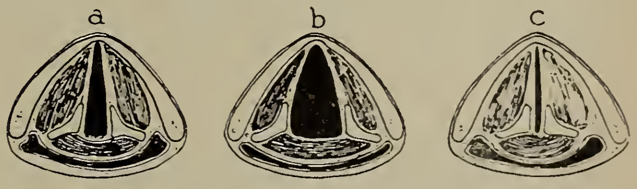

Fig. 1. a, Normal glottic space. b, Bilateral abductor paralysis soon after injury to the muscles. The patient can breathe but cannot talk. c, Bilateral abductor paralysis after the cords have come together. The patient can talk but cannot breathe on exertion.

Injury to the parathyroids may produce tetany. However, this is a rather rare occurrence in primary subtotal thyroidectomy. It occurs more often in operations for recurrent goiter. Therefore, the parathyroids should be exposed and preserved.

In considering the skin incision there are two important rules to follow. The first is to make the incision long enough and the second is to place it at the proper location. If the surgeon attempts to operate through a short cramped incision, he is only making the operation more difficult for himself and more hazardous for the patient. The incision should follow the curve of the neck where the neck and chest join. By placing the incision at this location it is easily covered by a string of beads. The incision should be balanced. The curve and length on each side should be the same. I have found it very useful to mark the middle and each end of the incision with a dye such as gentian violet with the patient in the normal sitting position. If the patient lies down before this is done the skin is pulled upwards by the head being curved backwards and makes it more difficult to determine the proper level. If the incision is carried through the skin, subcutaneous tissue and platysma the dissection is much simpler. The skin flaps are then elevated with the line of cleavage being between the platysma and prethyroid muscles. The most important point in the elevation of the flaps is that the elevation be carried far enough. The surgeon is very likely to stop this elevation before carrying it far enough unless definite landmarks are used. It will be carried far enough only if the entire gland is exposed.

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[1] By Permission of Lahey Clinic. *Surgery, Gynecology and Obstetrics,* and W. B. Saunders Company.

If the prethyroid muscles are to be divided the skin flaps must be elevated as described. If the muscles are divided high there should be no objection to their division. By dividing the muscles high their innervation is not disturbed and there is no subsequent disfigurement due to atrophy of the muscles. The reason for division is that it gives better exposure and good exposure is absolutely necessary if the recurrent laryngeal nerves and parathyroids are to be exposed. (Fig. 2.)

After the prethyroid muscles have been divided the next step is the division of the small veins that drain from the thyroid into the internal jugular vein. Unless these veins are ligated and severed the field will be bloody, making identification of the recurrent laryngeal nerves and parathyroids more difficult. These veins are identified by grasping the thyroid and retracting it upwards and medially to put them on stretch. After the veins are ligated and severed, the thyroid can be rotated medially and the common carotid artery and internal jugular vein identified. These two structures are clearly exposed and retracted laterally with a blunt retractor. By this maneuver the inferior thyroid artery can be identified as it emerges from beneath the common carotid. (Fig. 3). It is important that this artery be identified and dissected out for it is the key to the demonstration of the recurrent laryngeal nerve. If the nerve crosses over the artery it is seen quite readily during the dissection of the artery. If the nerve is not seen crossing above the artery, the operator knows that it passes beneath it, and therefore a search is made below. After the nerve has been identified the inferior thyroid artery is ligated with one ligature, but the vessel is not divided. It is not divided because there is a possibility that the ligature might slip off because of the powerful thrust in this vessel.

With the recurrent laryngeal nerve clearly exposed, the next step is the demonstration of the trachea and ligation of the vessels running to the inferior thyroid pole. (Fig. 4). This can be done easily and with absolute safety because the recurrent laryngeal nerve is under direct vision and the operator knows that it is out of harm's way.

The superior pole of the thyroid is now

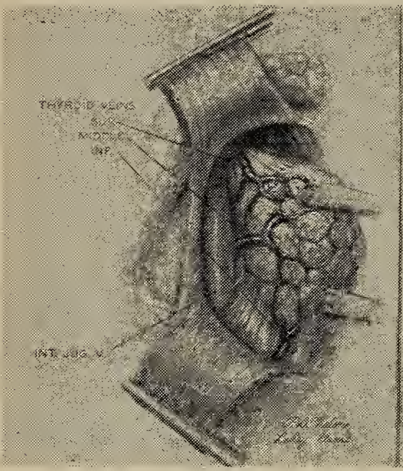

Fig. 2

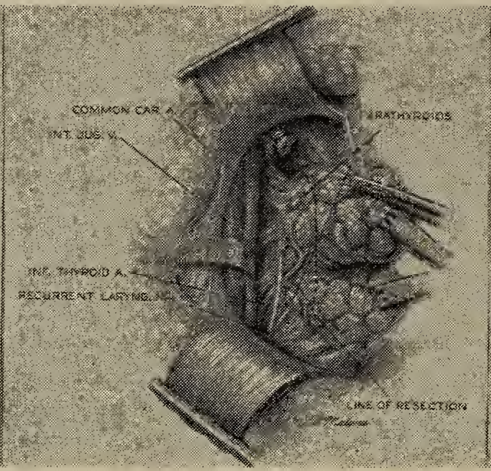

Fig. 3

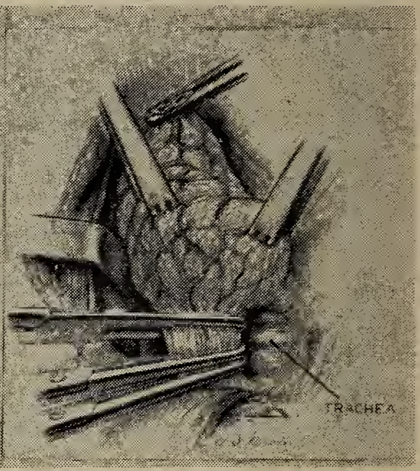

Fig. 4

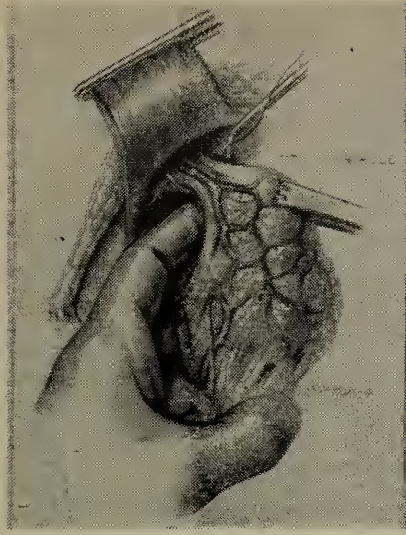

Fig. 5

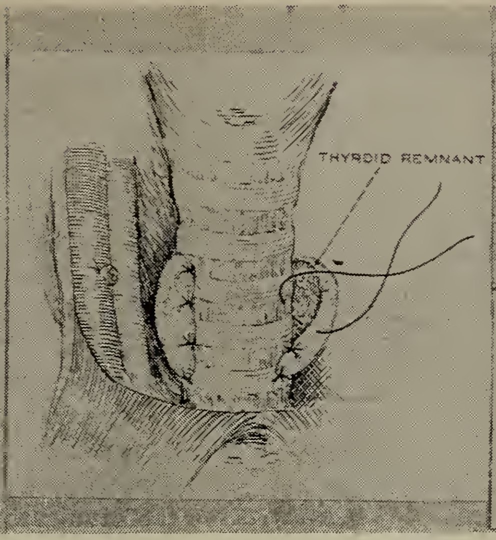

Fig. 6

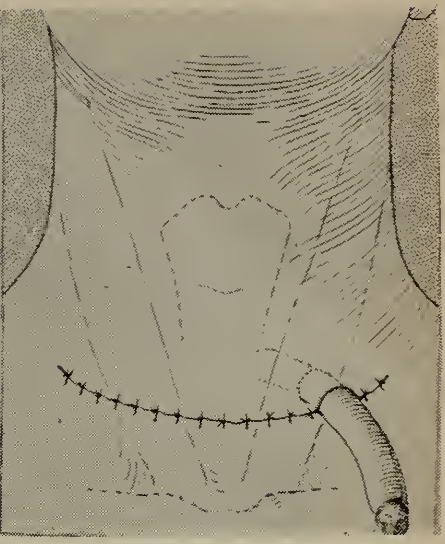

Fig. 7

grasped and separated from the larynx. After it is separated the vessels leading into the superior pole can easily be identified. They are then ligated being sure that no thyroid tissue is included in the ligature. (Fig. 5). After severance a second ligature is then placed above the first ligature. This double ligature is added safety because the superior thyroid artery has a very strong thrust and there is always danger of the ligature being pushed off.

The superior pole of the thyroid is now pulled downward and medially separating it from the larynx and the trachea. At the same time a search is started for the superior parathyroid as it most often lies behind the upper pole against the larynx. The parathyroid is identified and preserved. (Fig. 3).

With the upper pole pulled downward and the lower pole pulled upwards, it is easy to identify the amount of thyroid that is to be left. This is done by placing hemostats along the lateral surface of the gland at the line where the incision is to be made to remove the gland. (Fig. 3). The isthmus is freed from the trachea and the lobe is removed along with the isthmus by incising along the line of the clamps already placed and clamping and severing the isthmus as it is dissected from the trachea. The remaining thyroid tissue is sutured against the side of the trachea to aid hemostasis. (Fig. 6).

The procedure as described is the same for both lobes. As a rule, the right lobe is removed first. The same procedure and technique is then used to remove the left lobe.

The prethyroid muscles are now carefully sutured with interrupted mattress sutures. The skin is closed with skin clips. If a drainage tube is to be used, it is brought out through the sternocleidomastoid muscle through the lateral part of the incision. (Fig. 7). It should never be brought out through the midline as this causes the skin to attach to the trachea so that it will move up and down when the patient swallows. This may be very annoying and embarrassing to the patient.

The technique of thyroidectomy presented here has been used by me for the last year. This technique has made the operation a much more orderly procedure. It has also made it a much safer procedure. Before using this technique I would wonder if I had injured the recurrent laryngeal nerves or parathyroids. It is a very pleasant feeling to know that they were not injured because they were exposed and protected.

SUMMARY

A precision technique for thyroidectomy has been presented which adds much to the safety of the operation.

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Can we hope to have unity of purpose, when our leaders vacillate to the point that even their press releases are contradictory

Diabetes in Pregnancy*

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PRIOR to the discovery of insulin in 1922, obstetricians were not often confronted with the problem of caring for the pregnant diabetic. In this pre-insulin period, children with diabetes did not survive to the child-bearing age and the majority of those few women in the child-bearing age who became pregnant after developing diabetes, either aborted spontaneously, or were aborted because of the dangers.

With the advent of insulin, the diabetics not only lived a normal life, but were healthy, often became pregnant and delivered living children. As the years passed, it became evident that early abortions frequently occurred in diabetics and 50 to 60 per cent of all these pregnancies ended in fetal or neonatal deaths. In addition, there was an increase in the following complications: toxemia and eclampsia, large babies, mal-position of the fetus, polyhydramnios, and premature rupture of the membranes.

Priscilla White has done much work with pregnant diabetics and she lists five abnormalities which exist in them: maternal, obstetrical, chemical, fetal, and placental.

I will briefly summarize each of these five. The maternal abnormalities are vascular disease and hypo-ovarianism. Because of the vascular changes, she calculates the age of the pregnant diabetic as follows. If the diabetes is five years or less in duration, the chronological age is used. With five to fifteen years of diabetes the number of years is added to the chronological age and if the diabetes has been present more than fifteen years, the chronological age is doubled.

The obstetrical abnormalities which are more frequent than in non-diabetics are irritable uteri, early spontaneous abortions, premature rupture of the membranes, abnormal presentations, and uterine inertia at term.

Normally in pregnancy, there is gradual rise of the chorionic gonadotrophin until the tenth to twelfth week when there is a marked drop. At this time, there is a marked rise in estrogen and progestin excretion. These last two hormones continue to rise until the thirty-eighth week when they rapidly decline. In addition to the low renal threshold and disturbance in the water balance, approximately 75 per cent of the pregnant diabetics have an imbalance of these sex hormones, that is, there is a decrease in the serum estrogen and in the excretion of pregnandiol with a compensatory rise of the serum chronic gonadotrophin.

The fetus may show physical, chemical and pathological changes. Often the fetus is larger than normal. Some are jaundiced and pathologically are similar to babies with erythroblastosis.

The placenta in these patients tends rapidly to become mature, and this is followed by early senility.

From this it can be seen that if the internist can control the diabetes and if we can by replacement or stimulation, secure normal balance between the sex hormones and can deliver the baby before the placenta becomes senile, the maternal and fetal mortality should be almost as low as in normal obstetrical patients.

White, in 1947, reported that in seventy cases of diabetes with normal hormones, there was a fetal survival of 97 per cent and 1 per cent had pre-eclampsia. In 62 pregnancies in which the hormones were abnormal and were not corrected, 44 per cent of the feti survived, and 50 per cent of the mothers had toxemias. In 190 pregnancies with abnormal hormonal balance which were corrected with daily injections of estrogen and progestin, 90 per cent of the babies survived and only 5 per cent of the mothers developed toxemia.

The Smiths had equally as good results in cases in which stilbestrol was given in large doses. Many others have reported series smaller than the above-mentioned two authors, and their fetal survival ranges around 60 per cent to 80 per cent. In general, these men usually say that they are not in agreement with White and the Smiths, yet their fetal survival rate is much lower.

In treating a pregnant diabetic, the diabetes first must be controlled. It is best to regulate the insulin by the blood sugar and clinical findings, rather than urine sugar. This must be carefully watched; for it has been found that some of these women need more insulin, some less, and others the same as when not pregnant. Control of the diabetes and insulin requirements are determined by the internist who must work hand in hand with the obstetrician. The diet is very important and should be high in proteins and low in carbohydrates. Rather than a definite number of calories, the daily food intake can be better determined by carefully watching the weight gained.

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*Presented at a meeting of the Mississippi Association of Obstetricians and Gynecologists, Greenville, Mississippi, October 26, 1950.

Now comes the obstetrician's duty. In addition to the usual prenatal care, vitamins, etc., we must regulate the hormonal balance.

White and co-workers determine whether or not there is a balance of the sex hormones in each pregnant diabetic. When there is an increase in the serum chorionic gonadotropic hormone and a decreased excretion of pregnandiol the following therapy is administered —5 mgm. of stilbestrol and 5 mgm. of proluton are given daily by intramuscular injection from the first time hormonal imbalance is found, usually between the tenth and fourteenth week until the twentieth week. From the twentieth week to the thirty-sixth week, each drug is increased 5 mg. every four weeks, so that after the thirty-sixth week, 30 mg. of each is being given daily. This dosage is continued until delivery.

From this it can be seen that the cost of the hormonal studies and the stilbestrol and proluton are almost prohibitive to the lower income groups. The drugs alone would cost from $150.00 to $300.00 per pregnancy.

The Smiths believe that the effect of stilbestrol in large doses is to cause an increased utilization of the chorionic gonadotropin by the placenta with a corresponding increase of placental steroid formation. Their recommended dosage of stilbestrol in diabetics who are pregnant or other pregnancies with hormonal imbalance is as follows: Starting at the sixth or seventh week, or as soon as a definite diagnosis of pregnancy has been made, 12.5 mg. of stilbestrol is given by mouth. The daily dosage is increased to 25 mg. a day from the twelfth to sixteenth weeks. At the seventeenth week, the dosage is increased to 50 mg. a day and maintained at this level until the twentieth week. Thereafter, the daily dose is increased 25 mg. every 5 weeks. At the thirty-fifth week the drug is discontinued, the dosage the last 5 weeks being 125 mg. a day. The cost of this is approximately $55.00 to $65.00 per pregnancy.

I personally prefer to use stilbestrol as it can be taken orally, and it is not as expensive as the injections of stilbestrol and proluton. As we have no means here of determining the value of the serum gonadotropic hormones or urinary pregnandiol excretions, and by the time abnormal changes are found irreversible processes have already occurred in the placenta or fetus, I feel that every pregnant diabetic should receive stilbestrol as well as insulin, proper diet and vitamins.

The next problem is when and how to deliver these women. As the placenta tends to mature prematurely in pregnant women with diabetes, most internists and obstetricians recommend delivery between the thirty-fifth and thirty-eighth week, depending upon the patient and the size of the fetus.

As to the method of delivery, I feel that each case has to be individualized. In a multipara or a primipara with a "ripe" cervix and no cephalo-pelvic disproportion, one is justified in attempting a medical induction, with a vaginal delivery in view. This is usually done at the thirty-eighth week or any time after the thirty-second week when symptoms of toxemia appear. If on the other hand, the presenting part is high, the cervix long and closed, then a Caesarean section is the choice method of delivery. The elderly primipara and the primipara with a breech presentation are probably best delivered by Caesarean section.

Now I would like to present two case reports:

Case 1. Mrs. D. H., a 28-year-old gravida II, para I, E.D.C. February 5, 1949, a diabetic of 6 years' duration. Her previous pregnancy terminated May 15, 1947, in a stillbirth. When first seen in the thirteenth week of this pregnancy, she was taking 30 units of protamine zinc insulin daily and 20 units of regular insulin before meals. Her blood pressure was 120/60, weight 115 pounds, and Hb. 90%. Her blood was Rh. negative. The urine had a 1+ sugar, and the blood sugar was 166 mg./100 cc. She was sent to an internist for regulation of the diabetes. As there was no laboratory available for hormonal assays, we decided to withhold the sex hormones. However, at a later date in the twenty-ninth week, after much consideration, she was started on 15 mg. of stilbestrol a day and the dosage increased by 5 mg. a week. The highest amount ever given was 30 mg. a day, so I doubt if the stilbestrol had any effect.

From the thirteenth week to delivery, she gained 23 pounds. The blood pressure varied from 110-120/75-85. On the last office visit it was 130/90. One week before term a medical induction was begun, using castor oil, enema and small doses of pitocin. Shortly after the contractions began, the membranes were ruptured. A living male, weighing 8 lbs., 1/2 oz., was delivered spontaneously with an episiotomy, vertex ROA, after a labor of 10 hours, 28 minutes. The baby breathed immediately and required no resuscitation. During labor and for 48 hours afterwards, the patient's blood pressure was around 150/90. The mother and baby were discharged on the sixth postpartal day in good health.

Case 2. Mrs. C. E. S., a 39-year-old gravida II, para O. E.O.C. October 26, 1949, a diabetic of 11 years' duration. When first seen in the ninth week of pregnancy, she was taking 10 units of protamine zinc insulin plus 30 units of regular insulin. Her blood pressure was 150/85, weight 190 pounds, and Hb. 95%. Her blood was Rh positive, the urine had 3+ sugar, and the blood sugar was 103 mg. per 100 cc. the following morning. For the past 3 years, she had been under the care of an ophthalmologist as in 1946 she had multiple hemorrhages in the right retina and could perceive only light in this eye. During this pregnancy the right retina was markedly improved, and she had 10/100 vision. Her local physician continued to treat the diabetes. At the eleventh week, she was placed on 25 mg. of stilbestrol a day. At the fifteenth week this was increased to 50 mg. a day and at the seventeenth week to 75 mg. and from the nineteenth week until delivery she received 100 mg. a day. Her blood pressure fluctuated from 140-150/80-90 until the last two weeks when it rose to 180/100. She gained 19 pounds from the ninth to the thirty-fourth week. During the pregnancy the insulin was increased to 35 units of protamine zinc insulin. The last office visit was the first time albumin was found in the urine. She had edema of the extremities the last two visits. Due to these signs of toxemia, she was hospitalized at the thirty-fourth week and three days later a Caesarean section was done under local anesthesia. A living male weighing 8 pounds, 5 ounces was delivered. The baby was in good health. The blood urea nitrogen was 27.8 mg. prior to delivery and 12.2 mg. on the third postpartal day. Postoperatively she had severe upper right abdominal pain. Later on x-ray, she was found to have a large dilated gall bladder. When discharged from the hospital she still had gall bladder pain. The baby was in good health.

After all has been said, the problem of the pregnant diabetic is still not too clear. While the fetal survival rate is increased and the toxemia is decreased with accurate control of the diabetes and administration of hormones, the placenta still matures early and delivery must be effected before term. Why, in the pregnant diabetic, if by stimulation or substitution the sex hormone can be kept in normal balance, should the placenta ripen prematurely and toxemia still occasionally occur? Let's hope that before too long this problem can be correctly solved.

SUMMARY

1. A brief summary of diabetes complicating pregnancy is presented.

2. Until further advances are made in this problem, the treatment should aim at control of the diabetes, maintaining normal hormonal balance, and delivery of the fetus before the placenta is senile.

3. Two cases of pregnancy in diabetics are presented. In both the maternal and fetal mortality was zero.

4. Both patients developed toxemia. One developed it without so-called adequate treatment. The other patient developed severe preeclampsia in spite of large doses of stilbestrol.

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Can we fight communism when some of our leaders do not seem to know the definition of the word? Can we fight socialism, when others of our leaders refuse to consider the desires of the people in rejecting the welfare state?

Diaphragmatic Hernia of the Liver with Review of the Literature*

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THE x-ray was widely introduced into medical science about 1908.[8] Somewhere around 1910[72] barium was introduced in roentgenological examinations of the gastro-intestinal tract but like many other new aids in diagnosis it was not used extensively for many years. It was therefore not before the middle twenties that diaphragmatic hernia became recognized during life often enough to take it from the brackets of medical curiosities.

In the past twenty years the literature has contained many reports of large series of cases and scholarly presentations on all phases of the problem. In the light of this, one is hesitant to report a single case unless it is deemed of sufficient rarity to be interesting and thus justify presentation.

The case to be described later is of particular interest in two ways. First, it represents a very rarely reported type of hernia, namely a right-sided congenital hernia of liver tissue contained in a sac. Secondly, it was discovered in a routine chest x-ray survey in a patient of middle age practically asymptomatic. She agreed to an exploration on the basis of a mistaken diagnosis as a benign chest tumor.

When the decision is made to report a medical rarity it is necessary to review such a volume of literature that there usually arises a temptation to summarize the opinions and data found and present it in a form of a review.

Historical

Putney[63] and others[40] state that Hippocrates knew of abnormal openings in the diaphragm. Ambröse Paré first drew the attention of the medical world to the condition when there was published in 1610 an account of two cases found by him. The date of publication probably was 1610 but Tihen[72] and later Adams[1] give the date as 1575. Tihen cites the following reference "Paré A. Oeuvre. Paris, G. Buon. 1579." Morrison, Morrison and Delaney[57] also use this date. Paré died in 1590 so if the date 1610 is correct it simply means the cases were reported from some of his records twenty years after his death.

1642. Fabricus Hildanus reported two more cases, both traumatic.

1689. Riverius Lazars described the first congenital diaphragmatic hernia.

1769. Morgagni wrote the first monograph on the subject and was the first to describe the spaces which have since carried his name[76, 2].

1775. Kirschbaum reviewed seventeen cases reported in the literature up to that time.[25]

1790. Petit reported a diaphragmatic hernia and also in this report he gave the first description of eventration of the diaphragm.[51]

1824. Sir Astley Cooper wrote an article discussing the condition.[2]

1829. Curvielliers first distinguished between congenital and acquired hernias.[51]

1853. Bowditch reviewed the subject and presented a report of a case from the Massachusetts General Hospital. He also thoroughly reviewed the literature from 1610 to 1846. He was able at that time to collect 88 cases.[41]

1854. Bowditch was the first to report a diagnosis of diaphragmatic hernia in a living subject.

1874. Lichtenstein reported the first case diagnosed on purely objective grounds.[38]

1879. Badenheuer performed the first laparotomy for relief of a nontraumatic diaphragmatic hernia,[2] but according to John Wood (1888) Guthrie had earlier proposed laparotomy for reduction but apparently had not performed the operation.[2]

1886. Ricolfi reported operative cure of a stab wound thus being first to repair a traumatic hernia, presumably this was by abdominal approach.[6]

1888. Newmann operated upon the first case of diaphragmatic hernia in which the hernial contents did not protrude through the thoracic wall.[6, 35]

1889. Postempski did the first thoracotomy for a traumatic diaphragmatic hernia.

1903. Andrew at the autopsy table discovered and first described the esophageal hiatus hernia.

1913. Perrie Duval did the first combined thoraco-abdominal operation.

Classification

The classification of diaphragmatic hernia has been simplified considerably by Harrington[23] who earlier had found the old attempts at classification based on embryology, etiology, pathological anatomy, presence or absence of a sac, etc., were hopelessly confusing and of little practical value.

His classification has two main headings which will include all hernias namely non-traumatic and traumatic.

INCIDENCE

The incidence of diaphragmatic hernia in the general population is very difficult to judge. Perhaps the best index has been the large number of induction films taken by the armed services during the recent war. This will give an insight into the incidence in the adult male population between the third and fifth decade. Kinzer and Cook[43] report that in a series of 412,149 routine chest x-rays and examinations in the Army there were 38 diaphragmatic lesions noted and of this total there were only three true diaphragmatic hernias recognizable as such by routine chest x-rays. This seems rather a minute percentage compared with other figures. It must be remembered however that those discovered in routine gastro-intestinal studies are in patients who have had sufficient symptoms of some kind to cause them to seek medical advice and therefore cannot be used as a basis for a cross section of our population as a whole. Other figures have been given by many authors, to illustrate the following are cited.

1930. McMillan[53] found three cases in 15,000 routine gastrointestinal studies.

1924. Pancoast and Boles are quoted by Donovan[11] and others to have found 16 cases in 9,000 gastro-intestinal series.

1936. Edward[17] reached a figure of the incidence of occurrence around 1 in 224 cases examined by x-ray.

1936. Newcomet and Spackman[59] found only 4 cases in 17,295 chest and gastro-intestinal x-ray studies. Their figures as to incidence run 1 in 4,324.

1938. Harrington[26] demonstrated the increase in recognition of the condition in a review of cases in the Mayo Clinic records. Between 1908 and 1926 there were 30 cases diagnosed. From 1926 to 1938 there 437 cases found.

1942. Kirklin and Hodgson[44] cite Hangon and Ehrenberg (Am. J. Obstet. and Gynecol. 1942, 43: 502-507) who reported that in 5,269 autopsies on stillborns and on infants up to one year they found 38 diaphragmatic hernias or about 1 in each 139 autopsies. This rather high incidence can be explained in part at least by the fact that a very high percentage of congenital hernias (Harrington estimates at least 75 per cent) die in the first month of life.

Hedbloom[38] in 1934 wrote a very complete review of the subject and mentioned the fact that of the 857 cases reviewed there were 14 cases where the hernia contained liver alone. Many cases contain liver in addition to other viscera.

White[78] refers to the rarity of these right sided cases as follows "Of far greater rarity are perforation of the liver through the right dome of the diaphragm. Keith, A., Brit. Med. Journal, Oct. 1910, Page 1297.) mentions two cases in which small processes of liver lay in the thoracic cavity, both in newborn infants."

As to the occurrence of the right sided diaphragmatic hernia as a whole, Eppenger found only 55 in 635 cases or .11 per cent. White[78] found only one right hernia in 8,000 routine autopsies at the John Hopkins Hospital.

Hartzell[34] found three right sided hernias in 68 cases. All three were right sided esophageal hiatus hernias.

Jenkinson and Roberts[39] reported two right sided hernias out of 100 cases of hernia.

Harrington[26] found one right sided case in 161 cases up to 1939.

Kerr and Steinberg[42] found three cases of right sided hernia in 13 proved cases of diaphragmatic hernias.

ANATOMICAL AND EMBRYOLOGIC CONSIDERATIONS

In regard to the gross anatomical description of the diaphragm one is referred to the many textbooks on anatomy. Attention is called particularly to the illustration in an article in *The Southern Surgeon* 8:127, Feb. 1939, by Truesdale[74]. These show the blood and lymphatic supply of the diaphragm with remarkable clearness.

For those particularly interested in a concise and detailed discussion of the embryologic development of the diaphragm attention is directed to a study of the subject as presented in 1943 by Bremer[4]. Harrington[29], and Kirklin and Hodgson[44] also give excellent discussions on the subject.

When one considers the embryologic development of the diaphragm and its descent from the cervical area to final position, one is struck with the fact that abnormalities are unusual rather than surprised at their occurrence.

When an organ develops from four or five separate sources and this complex membrane is fusing while descending from the region of the third cervical vertebra to opposite the twelfth dorsal vertebra, it is surprising that abnormalities of fusion or development actually so seldom occur. The embryologic basis for all diaphragmatic hernias except those through the dome is abundant.

The weak points in the diaphragm correspond with the points of fusion of the embryologic components. These points are the pleuroperitoneal hiatus (Foramen of Bochdalek), the esophageal hiatus, Foramen of Morgagni. (See Harrington's note on the embryological origin of this hernia[33], page 751.)

The most frequent point of herniation is the foramen of Bochdalek. The reason that this is not at once apparent from the literature is due to the fact that a high percentage (estimated to be about 75 per cent) of these patients die within the first month of life. Therefore the authors reporting series of cases in later life find the most frequent site is at the esophageal hiatus only because those through the pleuroperitoneal canal did not survive long enough to be considered.

The prevalence of left-sided hernias over the right is usually ascribed to two facts. First, the right diaphragm is protected from the results of trauma by the presence of the liver. Secondly, according to Harrington[29], the right pleuroperitoneal membrane closes first in the 17 or 18 mm. embryo. The pleuroperitoneal opening in the right side is also protected somewhat from as early as the 9.4 mm. stage since at that time the liver bud has fused to the right dorsal wall of the body of the plica vena cava. At the time the pleuroperitoneal membrane closes the liver has "fused with the right wall of the body protecting to a great extent the right half of the diaphragm and probably aiding in its most rapid completion."[29]

DIAGNOSIS

According to Hedbloom[38] before the advent of roentgenography the diagnosis of diaphragmatic hernia before death was rare. He credits Bowditch in 1854 with the first diagnosis of diaphragmatic hernia in the living subject.

Arnsperger, (Die Rontgenunlersuchung der Brustorgane. F. C. W. Vogel, Leipzig 1909, page 233) as cited by Unger and Poppel[75] states that before 1908 the condition of diaphragmatic hernia had not been recognized during life in more than ten instances.

Kirklin[44] states that the chief obstacle to the diagnosis of diaphragmatic hernia is the neglect to look for it.

Since these hernias may contain any organ of the abdomen above the pelvic brim in every conceivable combination through a hernial opening of any size from the very small to complete absence of one side of the diaphragm, it is not surprising that there is no characteristic symptom complex. It must also be borne in mind that the symptoms and signs may arise from either the abdominal organs and present symptoms characteristic of them or from the chest and represent evidences of interference with respiration or circulation.

TREATMENT

It is not within the scope of this paper to discuss the controversial problems related to treatment. Attention is directed toward the many excellent articles appearing in the literature such as the ones by Harrington[23, 24, 25, 26, 27, 28, 29, 31, 32, 33], Hedbloom[36, 37], Truesdale[73, 74], Donovan[10], Dorsey[13, 14], Schnepp[67] and others. There has appeared through the process of experience, experimentation and trial and error certain principles of recognized treatment. It

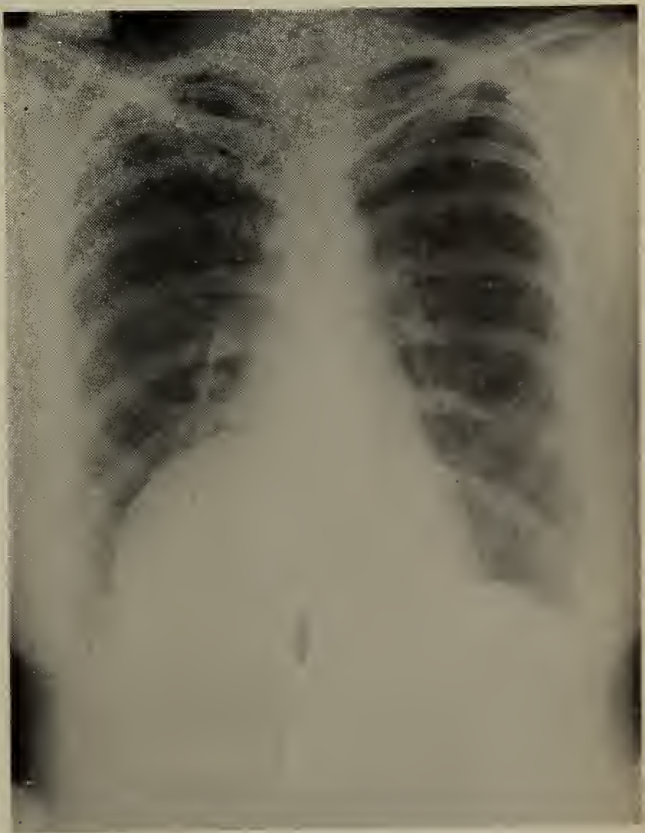

Fig. 1.—A posterior-anterior chest film of the case presented. Note the similarity of the mass to a benign chest tumor.

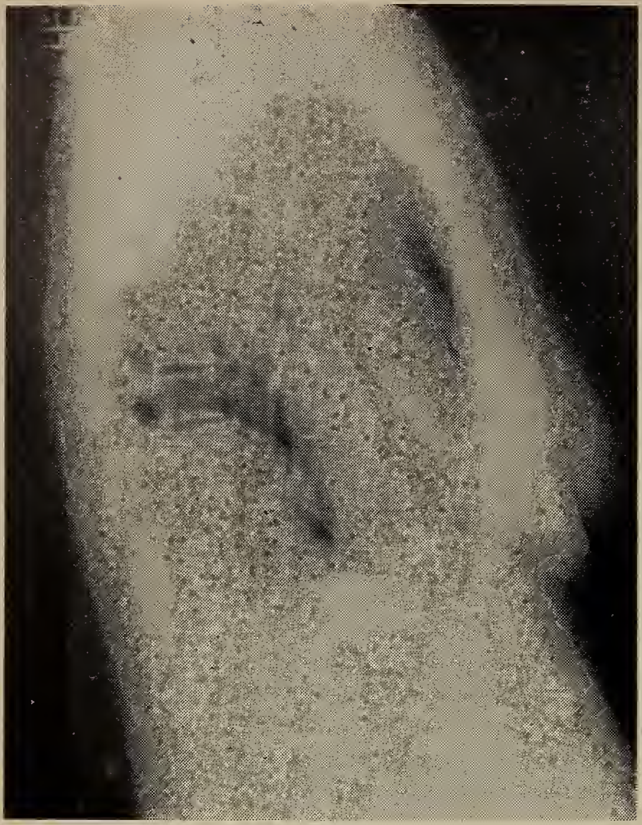

Fig. 2.—A lateral chest film of the case presented. Note the posterior position and smooth outline of the herniated liver.

is known that the only hope for correction is surgical.

In the hands of experienced surgeons with modern techniques, anesthesia, the use of transfusion and antibiotics, the repair of diaphragmatic hernia has been made relatively certain and safe. The repair of even huge defects has been accomplished with the aid of partial thoracoplasty, muscle grafts, etc.

The most dangerous types of hernias for repair are the large ones occurring in the newborn and characterized often by serious respiratory and circulatory difficulties. In these, operation is often a desperate emergency.

If the hernia is discovered in childhood there is now a tendency to operate as early as possible and not wait "till later in life" as was the custom not too many years ago.

CASE REPORT

White female, age 45. Occupation—seamstress in a garment factory.

Past medical history—Normal childhood and adult life. The only history of trauma was a fall from horseback at the age of four, striking her chin on a stump causing a laceration but she had no blow on her chest nor can she recall symptoms relative to chest or abdomen following the accident.

Family history—Father and mother living and well, ages 67 and 69. Four siblings living and well. One brother died of pneumonia. Is married and has had five uneventful pregnancies. Menopause two years ago.

History of present illness—Began work as a seamstress in a garment factory in 1943. Had a routine employee's x-ray at that time and was told that it showed an abnormality present. She understood that it showed "something in the upper abdomen" and was told by the factory physician that she probably had gall bladder trouble. Unfortunately these films are not obtainable for review. Soon after this she began to have vague gastric upsets with occasional vomiting but as this was accompanied by menopausal symptoms it was felt that they were part of the menopausal syndrome and she made no attempt to see her physician.

In March 1949 another x-ray survey was made at the factory and the chest lesion was again observed. She was advised to come to the Mississippi State Sanatorium for examination. She was first seen in the outpatient department of that institution March 23, 1949, and gave the above history.

Physical examination—Disclosed a middle-aged white woman apparently in robust health. Slightly overweight. Head and neck normal to examination. Chest barrel shaped. Left lung normal to physical examination. Right lung disclosed some impairment to percussion at the base posteriorly. Breath sounds were normal. Heart normal. Blood pressure 165/95, pulse 84. Abdomen slightly obese but normal. Pelvic examination normal. Extremities normal.

X-ray findings—Disclosed a rounded mass in the right chest appearing to be above the right diaphragm posteriorly and medially. Because of the history of occasional vomiting a barium meal was given which demonstrated a normal esophagus and stomach. Because of the position of the mass, it being far beyond the range of the bronchoscope, and length of time that its existence had been known (6 years) she was not subjected to bronchoscopic study.

Fluoroscopic examination—It was observed that the right diaphragmatic motion was slightly impaired medially and posteriorly but not more than one would expect from a benign tumor resting upon the diaphragm at that point.

Laboratory findings—All tests were within normal limits. R.B.C.—5,100,000. Hb. - 100%. Differential normal. No sputum specimen obtained.

Diagnosis—A mediastinal mass probably a benign tumor of the neurofibroma type or a dermoid cyst was made. She was urged to have the mass removed because of our inability to review previous films to determine whether or not it was increasing in size. She readily accepted surgery and was admitted on May 5, 1949. A barium enema was done to outline the position of the colon; it was found to be in normal position.

She was in excellent condition for the operation which was done on May 28, 1949.

Operation—Under intratracheal ether anesthesia, the chest was opened from the posterior lateral approach by resecting the eighth rib and removing 1 cm. portions of the seventh and ninth posteriorly. Very satisfactory exposure of the lower portion of the right pleural cavity was obtained.

The lung was free and packed off toward the upper end of the thorax.

The most striking content of the chest was a tumor mass that appeared to be about 3 inches in its widest part which was the portion nearest the diaphragm. It measured about 2 inches in thickness at the diaphragmatic level. The widest portion was in the coronal plane of the body, giving the appearance of being flattened from before backward. The tumor-like mass was situated posteriorly and medially. There was no demonstrable muscle tissue between the posterior and medial portion of the tumor and the costovertebral gutter. This part of the diaphragm was a heavy, tough, yellowish white membrane.

The mass was grayish brown in color and freely movable at the apex. It was discovered to be a portion of the liver projecting through the diaphragm covered by a grayish sac. This sac was thin and contained a network of fibrous tissue. In displacing the apex of the mass forward there was seen to be a frenulum like thickened portion of the sac extending up to within an inch of the apex and continuous with the fibrous membrane replacing the normal diaphragm posteriorly and medially. This part of the sac was densely adherent to the herniated liver but the remaining part of the sac was freely movable.

There was a very definite thickened fibrous ring surrounding the base of the sac and continuous anteriorly and laterally with the tendinous portion of the dome of the right diaphragm. The other portions of the right diaphragm appeared to be normal both in structure and movement.

The sac was opened on the anterior surface of the mass and the liver tissue contained in it examined. This portion of liver was a lighter color than normal which appeared to be due to the abundant content of fibrous tissue present. The herniated liver was much harder to the touch than normal. Where the fibrous ring surrounded the herniated liver there was a slight collar of depression. The non-herniated liver appeared normal to inspection and palpation. The abdominal portion of the liver was palpated through the hernial sac opening sufficiently to determine that the herniated mass was from the right lobe. The gall bladder was not palpated but no thorough search for it was made. The herniated liver was so closely grasped by the bifrous tissue ring at the opening of the hernial sac that I am sure no portion of any other organ had ever been herniated through it.

The right phrenic nerve was crushed about one inch above the diaphragm to facilitate repair.

The mass was easily replaced in the abdomen through the opening in the sac and this was closed by overlapping the redundant sac and firmly suturing it with interrupted cotton sutures.

The chest was closed with intercostal drainage catheters which were removed in 48 hours.

Recovery was uneventful.

Checkup examination—Three months after repair shows still a slight impairment of diaphragmatic motion still present. X-ray film of diaphragm shows it still to be slightly elevated but no evidence of recurrence of the hernia. She reports that the indigestion she frequently had previous to reduction of the hernia has disappeared completely.

DISCUSSION

In reviewing the literature for over twenty years only two similar cases that were probably not reported by Hedbloom in 1934 and included in the fourteen he is said to have found in the world literature up to that time were found. No attempt had been made to review the foreign literature since 1934, but the titles of numerous articles in those publications indicates that there may have been at least a few similar cases.

The cases referred to above were reported by Bradley and Greiner[3] in 1943 and by Wolfson and Goldman[81] in October 1948. The one reported by Bradley and Greiner was in a 5½-month-old white infant who died of pneumonia and an autopsy revealed a mass consisting of a portion of the liver and gall bladder through a defect in the right diaphragm.

In October 1948 Wolfson and Goldman[81] described a case of right-sided diaphragmatic hernia of the liver in many respects similar to the one in this report. Their case was also operated upon with the diagnosis of a benign chest tumor. The patient had been having a series of rather serious gastro-intestinal symptoms which the authors, after the diagnosis was made at the operation, felt were caused by an intermittent strangulation of the portion of the liver above the diaphragm. In their case the liver apparently reduced itself as soon as the constricting neck of the sac was incised and the liver tissue assumed its normal outline. The herniated liver in our case had undergone a definite fibrosis and made no change in shape or size while under our observation. It is also worthy of note that the mild gastro-intestinal symptoms exhibited by our case subsided after reduction of the hernia.

Another case very similar to the one herein reported was reported by Lilienthal[48] in 1931 and therefore probably included in Hedbloom's report. His case was in a grown woman (age not stated) who was operated upon with a diagnosis of dermoid cyst of the mediastinum. The report consists of a description of the operation dictated while it is being done. It registers his surprise as the true diagnosis becomes apparent. Reconstruction was made the same as in the present case by overlapping repair.

It is believed that the case herein reported represents a herniation which took place immediately following closure of the pleuroperitoneal membrane in the 18 to 20 mm. embryo and before the musculature invaded the structure, or is an instance of defective development of the diaphragmatic musculature.

If the exact situation had been known before the operation I do not believe the operation would have needed to have been done since it is not felt that the herniation of a hollow viscus could have taken place between the thick diaphragmatic hernial ring and the groove it had made on the surface of the herniated liver.

The formation of such a long cylindrical process from a tissue as firm and friable as liver deserves some comment. O'Brian[60] in dissecting a cadaver of a sixty-three-year-old man found the liver covering a defect in the pericardial portion of the diaphragm. It is of particular interest to note that the liver had herniated only 4 mm. into the pericardial sac. This undoubtedly was due to the lack of negative pressure in the pericardial cavity.

CONCLUSION

A rarely reported type of diaphragmatic hernia has been reported consisting of an asymptomatic herniation of a large process of the liver through the right diaphragm in a middle-aged woman. No other tissue was herniated. There was a definite enclosing sac present. All indications are that this was a congenital herniation.

This condition had been reported about fourteen times in a review of the world literature up to 1934. Review of the English language literature has yielded only two similar cases since 1934. It will be noted in the bibliography that numerous articles announced that they were concerned principally with esophageal hiatus hernias were not reviewed since it was felt they covered an entirely different situation from the one discussed in this paper.

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Come to think of it, who is really "stupid and dangerous"—those who believe in individual freedom, in dependence and self-reliance—or those who want to give the government life and death power over everyone and everything."

Primary Carcinoma of Vagina. A Case Report*

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THE purpose of this paper is to present a case of cancer of the vagina, an infrequent condition, but the rarity of which should not serve as an excuse for delays in recognition or at least the lack of suspicion and thorough examination. This case progressed to the extent rarely seen nowadays. (Photographs were taken but were not satisfactory enough technically of view for presentation). We thought the case worthy of the description because of several significant points in its history.

The incidence of primary carcinoma of the vagina is between one and two per cent of all genital carcinomas. As to the published cases, we have been able to find 366 in American, British and Continental literature up to 1948. The average age incidence in Moench's series was 49 years, the youngest patient being in that series 28 years of age. Our patient was 24 years old when it is assumed on the basis of history the first clinical evidence of carcinoma appeared. Baldwin reported a case of primary carcinoma in a girl of 14 (as one of the only ten cases proved by microscopic examination during 29 years in the Department of Obstetrics and Gynecology at the University of Michigan). Most common age incidence is between 35 and 55. The following conditions have been blamed as etiological factors of primary cancer of vagina: prolapse of uterus; the use of vaginal pessaries especially when cleansing was neglected (note: in 41 cases seen in Mayo Clinic between 1915 and 1931 in no case was uterus prolapsed or pessary ever worn); the long continued irritation due to the discharge from an inflamed cervix; leukoplakia. The relationship of any of these conditions to the etiology of vaginal carcinoma has not been conclusively established by the reliable statistical data.

Adenocarcinoma of the vagina is thought by Plant and Dreyfus to originate from adenosis (presence of glands in the subepithelial layers of the vaginal wall). That form of carcinoma was also believed to arise from vaginal cysts, from Gartner's duct, or from an adenomyoma of the rectovaginal septum.

Squamous-cell epithelioma is the most frequent neoplasm. Out of 59 cases seen in Mayo clinic, 37 cases had the biopsy performed with 35 squamous-cell epitheliomas and two adenocarcinomas diagnosed. Macroscopically two types of lesions are encountered: an ulceration which developed from a hard circumscribed nodule or an infiltrating papillary growth which can quickly develop into a cauliflower-like mass. In the latter form an early extension to the cervix or parametrial tissue may be expected. In advanced stages all types usually ulcerate. As to the site, the predilection is for the posterior wall and the upper third of the vagina. The metastases occur early, first to the lymph nodes, then to the cervix, uterus, bladder, ureters, rectum, sigmoid. The nodes affected might be inguinal, external iliac, hypogastric, and sacral, depending upon the original site of the development of neoplasm.

The symptoms at an early stage are insidious. Most often the patient's complaint is a thin blood-tinted discharge, which is frequently noticeable after intercourse. The prognosis should be extremely guarded. Very few patients survive the time test of the cure.

Sound judgment and experience have to be the guides to the choice of therapy. Because numerous cases in the past have been seen in advanced stages the surgical approach was not infrequently inadvisable or frankly impossible. The case presented by the writers proves that with good preoperative attention even an advanced case can offer some hope. There are a good many authors reporting favorable results with surgical treatment (Holland, Stevens, Dougal). Morris and Behney in treatise on "Radium in Gynecology" admit that a wide excision is the method of choice whenever it can be made. They advise deep x-ray as soon as healing has occurred. H. Gamble had three cases within the last several years, all of them treated surgically; there was one death due to metastasis three years after surgery; two patients are living, one 5, the other 6 years after extensive surgical intervention (personal communication).

When recurrences appear they may be excised or radium or x-ray instituted, the location and extent of growth being the deciding factor. Radio-therapy of the primary growth as recommended by Lederman and Mayneord, should comprise total dose of 6,000r to 7,000r for the vagina, but no more than 5500r for the vestibule. A number of authors (Williams, Norris, and Behney) advise deep x-ray therapy to follow radium treatment. In advanced cases the irradiation offers the only temporarily successful measure of palliation. In course of treatment a fistula, vesiculo-vaginal or recto-vaginal may develop, either as an after-effect of surgery or radiation treatment or due to the cancerous process itself. A judicious use of scalpel and most carefully applied radiation are the preventive measures in the first case; in second eventuality, as Norris and Behney point out, "properly applied irradiation is likely to inhibit rather than to produce this complication."

CASE REPORT: M. W., a 28-year-old colored nullipara was brought into the Coahoma County Health Department clinic by a neighbor because of extremely offensive odor. A coherent history was difficult to obtain but from records on file in the health department, it was found that she had been seen here on 3-11-38 at which time blood was reported as Kahn 4 plus. On 3-18-38, treatment was started. Neo-salvarsan and bismuth were given at irregular intervals until 8-23-46. The Kahn on 9-4-46 was reported as positive. Patient was not seen again until 2-17-48, again on 4-2-48 at which times blood tests taken were reported as doubtful. No record of physical examination was obtainable.

The patient had been unable to work for the past year, had marked difficulty in sitting down and in walking. She gave a history of a pimple appearing on vulva approximately 4 years previous, which became moderately indurated following scratching. This was followed by the vaginal discharge. About 2 years ago the lesion increased in severity to such extent that there was break down of the perineal tissues leaving a gaping wound. She states that she used lysol douches every day in an attempt to get rid of the discharge and that she noticed burning of the vagina and vulva, which she attributed to a too strong solution. For the past year there had been a foul odor associated with the discharge and she had continued to use douches in an attempt to get rid of the odor. During that time she had moderately severe pelvic and leg pain. She had scant menses on a few occasions during that year and there was minimal bleeding from the wound. There is no history of any pelvic examination being made either in the health department or by a private physician. The patient would not see a doctor nor tell anyone of her condition. The rest of the history was non contributory.

Physical examination revealed blood pressure 102/80, temperature 98.6 F., pulse 87, respiration 19. Patient was well developed, well nourished, slightly obese colored female, extremely pale, approaching to be chronically ill, with marked edema of lower extremities, and in moderate distress. Positive physical findings were limited to the abdomen and pelvis. There was tenderness over the entire abdomen with marked tenderness in the left upper quadrant and questionable enlargement of spleen. On pelvic examination there was a complete destruction of the posterior wall of the vagina with a resulting jagged cavity the size of a grapefruit, covered with whitish yellow pus. No structures could be distinguished. The urethra was apparently not damaged but it could not be determined whether or not a fistula existed. On rectal examination no structures or masses or evidence of infiltration could be felt. The destruction in the perineal region reached the anterior wall of the rectum. The glands in the inguinal region were hardly palpable bilaterally. No induration, scars or fistula were noted.

Laboratory findings revealed: R.B.C. 2,690,000 with 6 gm. Hemoglobin; 11,000 W.B.C. with 77% polys., 21% lymphs., and 2% mono. The total serum protein was 7. Kahn was reported as positive. Urine showed trace of albumen, 4 plus pus and 1 plus R.B.C.

At the time of the initial examination we felt that three conditions should be taken into consideration and be differentiated: granuloma inguinale; genital carcinoma; tertiary syphilis (its manifestation sometimes referred to as esthiomene).

COURSE: With the history of inadequate treatment for syphilis it was felt advisable to send the patient immediately to Delta Medical Center for further studies, treatment and biopsy of the lesion. On admission there, laboratory findings were as follows:

Mazzini—Positive 1-5
Darkfield exam — No Treponema but numerous fusospirochetes.
Smear for acid fast organism from lesion—Negative
Smear for Donovan bodies—Reported as suspicious.
Urinalysis (not catheterized)—
    Albumen—4
    Negative for sugar, casts
    Numerous W.B.C., R.B.C. and bacteria

Blood picture on admission: essentially as above. Biopsy revealed squamous cell carcinoma of vagina. X-ray of chest was negative (no evidence of metastasis). She was given transfusions (6 pints of whole blood), penicillin (because of positive S.T.S. and secondary infection) and streptomycin (20 grams) because of suspicious smears for Donovan bodies, and susceptible secondary invaders. On 2-2-49 her blood count was as follows:

R.B.C.—3,700,000; W.B.C.—9,800; Hgb.—10 gms.; Polys.—64%; Lymphs.—30%; Mono. 4%; Eosinophile —2%.

On 2-2-49 she was transferred to King's Daughters' Hospital (Greenville) where, after careful preoperative care, colostomy, the permanent type was performed. The post-operative period was uneventful. More transfusions were given and on 2-22-49 she was operated upon, under spinal anesthesia (pontocaine 120 mgms., procaine 100 mgm.*).

"It had been intended to use the Bovie unit for excision growth, but the cautery point was out and it was necessary to use the Downs cautery. Incision was begun and carried down one inch laterally to the involved margin of cancerous tissue throughout the whole area. The incision then went beneath the pubic arch, dissected off the vagina and the vulva at the junction with the skin fascia on the right and left sides over the pubic bones. The vagina as a whole was dissected loose. All the cancerous tissue removed, the rectum dissected up following up through the peri-rectal tissue embracing the vagina until the broad ligaments were reached, clamped and divided with the cautery. The uterus was brought down, removed and the lower third of the bladder removed. The bladder was then sutured and catheter inserted and tied into it. In addition the pelvic floor was resutured with No. 2 catgut and the pelvic cavity packed with a five-yard roll of gauze around which four large penrose tubes were inserted. All bleeding points were transfixed and ligated. Blood transfusion was given throughout the operation and during the course of the anesthesia 1000 cc. of glucose with 1 cc. of adrenalin was administered. Patient was badly shocked immediately after operation but within an hour had regained a large degree of stability."

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*The writers want to express their appreciation to Dr. H. A. Gamble for his most valuable contribution in form of surgical care of this case.

The pathological report of the excised material showed an active atypical squamous cell carcinoma with many cells in mitosis and only a slight tendency to differentiation. The patient made slow but steady recovery and on 5-1-49 the laboratory findings were as follows:

R.B.C. 4,120,000
W.B.C. 4,650
Lymph. 26
Mono. 2
Neutroph. 72
Urine—Faint trace of albumen and few pus cells.

She was discharged on 5-6-49.

The patient was seen again by one of us (T.D.L.) on 6-24-49. The pronounced improvement in patient's condition was evident. In addition to the established colostomy it was noted that the previously involved area had healed satisfactorily. The edema of the lower extremities disappeared almost completely. The only complaint on the part of the patient was continuous seepage of urine. Transposition of ureters is being considered as next step in surgical treatment of this case.

COMMENT: The case reported is remarkable, though not exceptional in degree of destruction. In spite of advanced stage of malignancy it was felt advisable, on the basis of Doctor H. Gamble's experience, to use surgical approach. The patient when first seen by us was in a very poor condition indeed. She was syphilitic in addition and secondary infection further deteriorated her condition. Thanks to combined penicillin and streptomycin therapy, numerous blood transfusions and proper preoperative care, she withstood well two surgical procedures, improved remarkably afterwards, and even in case of recurrence of the new growth we feel that her life has been prolonged.

The case illustrates consequently, that in the hands of our experienced surgeon, even in advanced stage surgery is the answer to this type of malignancy.

SUMMARY: A case of primary carcinoma of the vagina with a history of at least four years' duration is reported in a 28-year-old female. The new growth extended to the bladder, uterus and a considerable area of buttocks and thighs. Surgical excision with dissection of vagina, vulva, removal of uterus, rectum, and the lower part of the bladder resulted in definite improvement in the patient's condition. No claim of cure can be made before the test of time.

NOTE: Since we last saw the patient she underwent transposition of the ureters. She was subsequently transferred to the State Hospital at Whitfield because of the development of neurosyphilis. At the time of the submission of this report, the prognosis in her case must be guarded both because of the poor response to the treatment of her neurosyphilis and the fact that she continues to have foul discharge from the site of the primary cancerous lesion.

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Sir William Osler, great physician, scholar, humanitarian, was a stout believer in joining the medical society. He urged his fellows to "never miss a meeting." Plan to attend our state meeting on the Coast May 15-17.

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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Editorials

HEART COMMITTEE FORMED

The State Board of Health is to be commended for approaching the heart control problem with great caution and cooperation of the medical profession at large and we are informed by the representative of State Board of Health that no new approach will be made except when suggested and approved by the Heart Committee of the State Medical Association.

The automatic perpetual engine, called the human heart, that does not stop from the womb to the tomb contains mysteries no doubt that we do not yet know. Without recognition from the Divine, no man in the whole world can say just what causes it to kick off with its first beat in utero. Only seconds or minutes at most of rest are allowed at any one time throughout its entire life journey. We may not know yet all the forces that enter into the control of our intricate heart mechanism, but it constitutes a major challenge, for heart disease is the leader in taking human life. Its toll is far too heavy. We must think in terms of heart disease. The problem is certainly no greater than cancer or infantile paralysis.

We are now making a beginning on the heavy problem in our state. A heart committee has been appointed by President B. S. Guyton from the State Medical Association, the State Board of Health cooperating in this important move. Dr. Thaddeus D. Labecki has been selected as consultant to the Heart Disease Control unit. He is worthy and well qualified for this work. We shall come to think in terms of heart diseases, heart management, and preventive measures. We shall learn to utilize what is known about the human heart and find out more to stop the death rate from this ailment. We believe we are off to a good start. Let us cooperate.

THE STATE MEETING

Let us now concentrate on our state meeting which will be held this year on the Coast at the Buena Vista Hotel, beginning the third Tuesday in May. Every doctor should attend our state meeting. It is very important. Our president, Dr. B. S. Guyton, is doing his best to give a constructive administration. Let us show our appreciation by our presence. We are sure the program committee is not leaving anything undone to give us a fine scientific program. Biloxi is a fine place to meet. Mark your calendar and make your reservations now.

MID-SOUTH CLOSES FINE SESSION

The Mid-South Postgraduate Medical Assembly had a most successful session in Memphis in February. The papers were above average, some mighty fine; the spirit of the meeting was unusually good. Thirty-minute papers with the short recesses was an innovation which pleased every one. The public night was one of the best we have had. It was very regrettable that Doctor Price, the president, was sick in Miami, Fla., and could not attend the meeting. The vice-presidents filled in and did the job with the aid of Dr. Thurman Crawford, the obliging secretary. The past-presidents also had a nice attendance at their annual dinner. The exhibitors seemed quite well pleased and all in all the meeting was good.

This assembly fills a need for the busy doctor who wants to get a review of medicine and surgery in concentrated form by the best men in the profession. The doctors of Memphis are always very cordial and the medical atmosphere of the city is invigorating.

Dr. John Archer of Greenville, Miss., is now the full-fledged president with Dr. H. T. Smith of McGehee, Ark., a past-president of the Arkansas State Medical Association, coming in as president-elect.

News and Comment

CANCER SEMINARS

The seminars on cancer held last year in parts of Mississippi were well attended and served a fine purpose. They were very valuable to the medical profession from the standpoint of reliable information. The laity heard about the meetings and their interest was activated. It is a fine way to bring cancer education right to the busy practitioner and to safeguard further the public against its most stubborn human enemy. Our observation is that the doctors in north Mississippi were highly pleased with the courses and considered them most helpful. We are sure that south Mississippi likewise will be benefited by the seminars.

We acknowledge indebtedness to Dr. Parsons for arranging these courses and to Dr. Hugh Gamble and others for their untiring efforts against cancer. The following letter from Dr. Eugene Trudeau of Biloxi is indicative of the response engendered by these seminars:

"I think the recent seminar which was held on the Coast was very well accepted. There was good attendance; the dinners were exceptionally good, and the round table discussions were lively. Many of those with whom I have discussed the seminar have been very complimentary and have said that they benefited from attending.

"One good example of the merits of the meeting is in my own private practice. The night after the first meeting I picked up a cancer of the lung, and this patient has since been operated upon. I know that the lecture on lung malignancy produced results.

"I just wanted to send this note to you to prove the worth of the meeting."

HEART DISEASE CONTROL PROGRAM LAUNCHED

The Heart Committee of the State Medical Association appointed by Dr. B. S. Guyton, president of the Association, met in Jackson, Mississippi, on January 24, with Dr. A. L. Gray, vice-chairman presiding in the absence of the chairman, Dr. T. E. Wilson. The members in attendance included Drs. Gaines Cooke, Lawrence J. Clark, J. R. Foster, Joseph Melvin, E. M. Murphey, III, W. K. Purks, and Felix J. Underwood.

The discussion covered the wide scope of possible approaches to the control program in the cardiovascular field and in the course of the meeting the following motions were carried:

1. That cardiovascular seminars be conducted for the benefit of the physicians of the state utilizing out-of-state speakers as well as qualified physicians from within the state.
2. That follow-up be made of the suspected cases found in the review of the films taken during the tuberculosis survey, in order to evaluate this approach as a case finding method and utilize the existing diagnostic facilities in the local health departments, hospitals, etc.
3. That publication and distribution be made to the physicians in the state of the useful diagnostic and therapeutic hints in the field of the cardio-vascular practice.
4. That an early creation of the Mississippi Chapter of the American Heart Association be accomplished.
5. That informal conferences be conducted from time to time in case of and at the request of the physicians in the areas where cardio-vascular consultation is not available. Utilizing the participating physicians' clinical material, it is hoped that some benefit might be derived from the discusson of the diagnostic and therapeutic problems encountered in the daily cardiovascular practice.

These activities will be carried under the joint auspices of the Heart Committee of the State Medical Association and the Mississippi State Board of Health (Division of Preventable Disease, Dr. A. L. Gray, director). Dr. Thaddeus D. Labecki, medical consultant to the Heart Disease Control Unit was assured of the active cooperation and support on the part of the committee and the profession.

A. G. A.

The 1951 meeting of the American Goiter Association will be held in the Deshler-Wallick

Hotel, Columbus, Ohio, May 24, 25 and 26, 1951.

The program for the three-day meeting will consist of papers dealing with goiter and other diseases of the thyroid gland, dry clinics and demonstrations.

POSTGRADUATE COURSES

The Michael Reese Hospital Postgraduate School is offering a one-week course in "Clinical Dermatology—Refresher Course in Diseases of the Skin for General Practitioners." This full-time, intensive course will meet from April 2 to April 7, 1951. Clinics and lectures will be conducted by the members of the Department of Dermatology and Syphilology.

Also offered is a one-week course in "Surgery—Indications, Pre- and Postoperative Care" from April 9 to April 14, 1951. Clinical and didactic material in this full-time course will be presented by members of the Department of Surgery and cooperating departments.

A later two-week course will be offered in "Recent Advances in Internal Medicine," April 30 to May 12, 1951. Clinical and didactic material pertaining to recent advances in diagnosis and therapy will be presented by members of the Department of Internal Medicine, other clinical departments and of the Division of Laboratories and Research.

For further information on any of the three courses, address: Dr. Samuel Soskin, Dean, 29th St. and Ellis Ave., Chicago 16, Illinois.

The Southeastern Surgical Congress Graduate Assembly

Nineteenth Annual Meeting . . . April 11-14, (*Wednesday, Thursday, Friday and Saturday*) 1951

GUEST SPEAKERS

Dr. Ray M. Bobbitt, Huntington, W. Va.
Clinical Aspects of the Ectopic Ureter

Dr. Otto C. Brantigan, Baltimore, Md.
Thoracoplasty in the Treatment of Pulmonary Tuberculosis

Dr. William S. Brockington, Greenwood, S. C.
Xeroderma Pigmentosum

Dr. Robert J. Coffey, Washington, D. C.
Gallstone Ileus: A Review of Fifteen Cases

Dr. H. Earle Conwell, Birmingham, Ala.
The Treatment of Certain Complicated Pelvic Fractures

Dr. David B. Corcoran, Suffolk, Va.
Continuous Lumbar Sympathetic Block

Dr. T. C. Davison, Atlanta, Ga.
The Evaluation of Protein Bound Iodine Determination in Thyroid Disease

Dr. L. C. Feemster, Tupelo, Miss.
Prostatectomy by the General Surgeons Report of Hundred Cases of Retro-pubic Prostatectomy

Dr. Cless Y. Fordyce, Baltimore, Md.
Problems in Anesthesia of Special Interest to the Surgeon

Dr. Elmer Lee Henderson, Louisville, Ky.
President, American Medical Association
"1951"—Medicine's First Year of Grace

Dr. C. C. Howard, Glasgow. Ky.
President, The Southeastern Surgical Congress
Accidents and a Proposed Program for Prevention

Dr. Hugh C. Ilgenfritz, Shreveport, La.
Vertebral Ostetochondroma

Dr. H. Reichard Kahle, New Orleans, La.
Omphalocele

Dr. Linwood D. Keyser, Roanoke, Va.
Urinary Calculi—Present Concepts of Etiology, Treatment and Prevention

Dr. Oswald S. Lowsley, New York City
Modern Methods of Diagnosis and Treatment in Urology

Dr. Herman Mahaffey, Louisville, Ky.
Fibrosarcoma of Ileum with Report of Two Cases

Dr. John Martin, Chicago, Ill.
The Diagnosis and Surgical Treatment of Intracranial Aneurysms

Dr. Michael L. Mason, Chicago. Ill.
Irradiation Dermatitis of the Hands

Dr. Marshall L. Michel, New Orleans. La.
Intestinal Obstruction in Infants and Children

Dr. A. T. Miller, Jr., Durham, N. C.
Recent Studies on Obesity

Dr. Joe M. Parker, Oklahoma City, Okla.
Prevention of Lymphedema of the Upper Extremity After Radical Mastectomy

Dr. Claud W. Perry, Anderson, S. C.
Treatment of Fractures with Intra-Medullary Nail

Dr. Charles L. Prince, Savannah, Ga.
The Management of Staghorn Renal Calculi

Dr. Leslie V. Rush, Meridian, Miss.
Important Factors in the Medullary Fixation of Fractures

Dr. W. Hampton St. Clair, Bluefield. W. Va.
Thyroidectomy

Dr. R. L. Sanders, Memphis, Tenn.
Duodenal Ulcer and Its Complications

Dr. Paul W. Shannon, Birmingham, Ala.
The Low Back Problem

Dr. N. S. Shofner, Nashville, Tenn.
Malignant Tumors of the Thyroid Gland

Dr. Howard E. Snyder, Winfield, Kans.
Serum Cholinesterase Levels in Surgical Patients

Dr. Clyde C. Sparks, Ashland, Ky.
Common Benign Breast Lesions

Dr. Paul B. Steele, Pittsburg, Pa.
Evaluation of the Metallic S. M. O. Head

Dr. Ralph M. Stuck, Denver, Colo.
Subdural Hematoma in Infants

Dr. Homer S. Swanson, Emory University, Ga.
Congenital Arteriovenous Anomalies of the Cerebral Cortex, Their Surgical Treatment

Dr. Gershom J. Thompson, Rochester, Minn.
Female Urologic Disorders Which Cause Abdominal Pain

Dr. James W. Watts, Washington, D. C.
Angiography in Neurosurgery

Dr. Ashbel C. Williams, Jacksonville, Fla.
Skin Grafts in the Treatment of Extensive Pilonidal Sinus and Ischio-rectal Abscess

Dr. Frank M. Woods, Miami, Fla.
Abdominal Tumors: A Urologic Perspective

ANNOUNCEMENT

The American Cancer Society, Mississippi Division, announces the removal of the state office to 105 South State Street, Crowder Building, Jackson, Mississippi.

BOOK REVIEWS

Principles of General Psychopathology, by Siegfried Fisher, M.D., Clinical instructor in Psychiatry, University of California. Published by the Philosophical Library, Inc., 15 East 40th Street, New York 16, N. Y. 327 pp. Price $4.75.

With extraordinary clarity, through his own honest effort to penetrate the mind and its workings, Dr. Fischer has written this understandable, carefully defined book on psychopathological phenomena and their theoretical bases. His diction is simple but exquisitely accurate, and is therefore an excellent textbook for the student of this relatively young science.

Portions of the book develop new points of view: in the first part, particularly, the distinction between consciousness and awareness, the interpretation of pathology of thought, the definition of intelligence, and other sections. The second part investigates dynamic psychology and shows how the dynamics of feelings of insecurity and inferiority are integrated with those of neuroses.

A third division deals with symptom-complexes, and the fourth part gives attention to the influence of the personality on disease, dividing the concepts into personality, character, and temperament.

The general practitioner, desiring to keep abreast of scientific progress in this field so intimately bound up with his treatment of disease, would find *Principles of General Psychopathology* a ready, concise, and up-to-date handling of the subject.

DEATHS

DR. W. M. BIGGS

Services were held January 6 for Dr. Walter May Biggs, 70, from Osyka Baptist Church, with Rev. Joe Mefford officiating.

Dr. Biggs, prominent long-time physician of Osyka died at a McComb hospital. He was a Mason and member of Osyka Baptist Church.

Survivors include two daughters. Mrs. C. J. Lackey, of Forest and Mrs. J. C. Franklin of Greenwood; three sons, Dr. W. O. Biggs of Randolph Field, Texas; a brother, Dr. T. S. Biggs of Lake Providence, La., and two sisters, Mrs. Benton Cook of Grayson, La., and Mrs. Mary Belle Henley, of Prairie.

DR. FRANCIS M. POLLARD

Dr. Francis M. Pollard, for many years a physician at Lake Cormorant, Miss., died on January 30 in Memphis at the Methodist Hospital, where he became a patient Dec. 16. He was 73.

Services were held at New Bethlehem Presbyterian Church at Horn Lake, Miss., when the Rev. Irvin K. McArthur officiating.

Dr. Pollard was born and reared in Whitehaven and attended the University of Tennessee College of Medicine. He retired in 1921 and for the last 16 years had lived in Horn Lake. He was a member of New Bethlehem Presbyterian Church.

Dr. Pollard was surgeon for the Yazoo and Mississippi Valley Railroad until 1917. He was a member of the Mississippi State Medical Society and the DeSoto County Medical Society.

He participated in many charities. He had erected the memorial gate to the New Bethlehem Cemetery, where the members of his family are buried. He never married.

He leaves a brother, Dr. E. W. Pollard of Hughes, Ark.

DR. F. H. THOMPSON

Dr. Felix H. Thompson, 76, died January 14 at 2:30 a.m. at Mercy Hospital in Vicksburg after a lengthy illness.

He had been a resident of Vicksburg for the last several years but was for 45 years a practicing physician of Bogue Chitto.

Dr. Thompson was a graduate of Tulane University and was licensed in Mississippi in 1895. He was the oldest living member of the Bogue Chitto Methodist Church and was a member of the Bogue Chitto Masonic Lodge.

He is survived by his wife, with whom he celebrated his golden wedding anniversary in August, 1949, at the Bogue Chitto Methodist Church.

Other survivors include two sons, Ralph Thompson, Monroe, La., and Marvin Thompson, of Jackson; one daughter, Mrs. Grover Bates, of Greenville, Miss.; four grandchildren and a number of nieces and nephews.

DR. CHARLIE BUTLER

Funeral services were held for Dr. Charlie Butler of the Smithdale community who suffered a stroke and died in a McComb hospital January 25. Dr. Butler was 75 years of age and had practiced medicine for approximately 50 years, and was the only country doctor in Amite County, excepting one. His father was also a doctor, Dr. Frank Butler, who practiced in this same community for about 40 years, giving a total of 90 years of professional service for father and son, and the son lived in the same home occupied by his father.

Dr. Butler was a graduate of Tulane University, New Orleans.

Last rites were conducted from Catching's Funeral Home, McComb, with a great host of friends and relatives filling the funeral parlor and standing on the outside.

His body was carried to the Mars Hill Church cemetery for burial. Rev. C. O. Daniels, pastor of this church officiated.

He is survived by his widow, the former Miss Donnis Hewitt, three sons and three daughters. One son, Charles Hugh lives at Smithdale and is a rural mail carrier, and Lansing and Edwin conduct a business in McComb, and the three daughters, Marie, Audry and Martha live in McComb.

DR. S. L. NABORS

Dr. S. L. Nabors, 74, died at 1 a.m. January 29 after suffering a heart attack January 17.

Survivors include his widow, Mrs. Mae Nabors, two sisters, Mrs. Will Morris, Amory; Mrs. Joe Leggett, Birmingham, Ala.; a daughter, Mrs. Morris Kelley, Memphis, Tenn.; three grandchildren and two great grandchildren.

Active pallbearers were Shelby A. McDaniel, Clyde Black, John L. Patterson, Elmer Roberts, John Evans, Talmadge Boozer, Woodrow Mills and S. A. Ritter.

Dr. Nabors had practiced medicine in the Evergreen community, where he spent his life, since graduation from the Memphis Medical College in 1903.

DR. R. E. HONNOLL

Dr. Robert Edwin Honnoll, sixty-four-year-old physician of Corinth, died on December 26 at the Corinth Hospital following a coronary thrombosis which occurred twelve days before his death.

Dr. Honnoll was born in Alcorn County, the son of a long established family, Robert W. and Sarah Hill Honnoll. His medical education was obtained at Memphis Medical College, where he was graduated in 1912. Soon after receiving his M.D. degree he located in Rienzi, about seven miles from Corinth, where he spent most of his professional life. He was a veteran of World War I, a Presbyterian and esteemed churchman, and one of the most beloved men of his section.

Interment was in New Hope cemetery, the Rev. F. M. Kincaid saying the last rites.

Surviving are his widow, Mrs. Ardena Mathis Honnoll, two sons, Robert of Jackson, Tenn., Scott of Biggersville, Miss.; and two daughters, Mrs. Maurice Busby and Mrs. James William Grawner of Biggersville. His mother, Mrs. Underwood of near Corinth, and a brother also survive.

DR. N. J. MILSTEAL

Funeral services for Dr. N. J. Milstead, 88, of Jackson, were held February 12 at 2 p.m. from Wright and Ferguson Chapel with Dr. Harold G. Basden, pastor of Calvary Baptist Church, officiating. He died at a local hospital following an illness of several months.

Dr. Milstead, a native of Yalobusha County, graduated at Louisville Medical College in the class of 1886, after which he practiced in Tillatobia, Miss., until 1903, when he moved to Waverly, La., where he remained for three years. He came to Jackson in 1906 where he practiced until his retirement a few years ago. He was an honorary member of Central Medical Society.

He is survived by an only son, Hugh Milstead, of Jackson, and by several nephews.

Pallbearers named are: J. M. Cade, Oscar Adams, Herman Crawford, Leonard Gaskin, H. H. Welborn and Fred Cruise.

IN MEMORIAM

There are times when the passing of a citizen from a community is felt as a personal loss by every man, woman, and child in its environs.

This tribute of respect and esteem comes only to those who have rendered outstanding services to their fellow mortals.

So it was with Dr. John H. Stone, Tremont, Mississippi, who went the way of all flesh, August 1, 1950.

A graduate of Vanderbilt Medical School, he began the practice of medicine in his home community and there served for over one-half century, ministering to the sick and injured in such skillful and faithful manner that he endeared himself to multiplied hundreds who sought his services.

Always interested in the betterment of his community, both from the standpoint of religion and education, he was most active in promoting and supporting its church and school and both owe much to his energy and financial support.

Dr. Stone occupied several positions of public trust in state affairs and in all of them he acquitted himself with honor.

It is not our purpose to write any eulogy for our friend and colleague for it would be superfluous. His eulogy is written in the hearts and memories of those whom he served, so long, so unselfishly and so well.

Truly, he "fought the good fight and kept the faith" not only as to his God but as to his profession, as well.

IN MEMORIAM OF DR. JOHN U. ABERNETHY

In the death of Dr. John U. Abernethy, which occurred at the family home at Troy, in Pontotoc County, on July 27, the Northeast Mississippi Medical Society has lost another of its members, and a man who measured up to the highest standards of the profession to which he devoted more than a half century.

Dr. Abernethy, who was 94 years old at the time of his death, was born March 9, 1856, in the Troy community and after his retirement several years ago returned to live at the family homestead.

Following his education at Tulane University and the University of Texas, Dr. Abernethy returned to Pontotoc County and began the practice of medicine. He later moved to Quitman where, for many years, he served as county health officer and also held the office of county superintendent of education. He taught schools for a long time in both Mississippi and Texas.

In memoriam of Dr. Abernethy, the following resolution is presented:

WHEREAS, the Northeast Mississippi Medical Society, by the recent death of Dr. John U. Abernethy, has suffered the loss of another of its members who, throughout a most useful and successful career of more than a half century rendered unselfish service to his fellowman, constantly exemplified the highest standards and ideals of the medical profession; and

WHEREAS, Dr. Abernethy was admired by his fellowmen—professional and otherwise for his professional skill and knowledge, his fidelity and integrity, his cheerful, friendly, and charitable nature, that his passing occasions a widespread feeling of distinct loss and sorrow to this society, to the community, and to the state;

NOW, THEREFORE BE IT RESOLVED, that the Northeast Mississippi Medical Society does hereby recognize and record its loss in the passing of Dr. John U. Abernethy and its appreciation of his fine contributions to this society and to mankind, and

BE IT FURTHER RESOLVED, that this society extend sincere sympathy to the family and loved ones and to the many friends of Dr. John U. Abernethy and that this resolution be recorded in the permanent records of this society and that a copy thereof be sent to the family of Dr. Abernethy and that a copy be sent to *The Mississippi Doctor* for publication.

INTERPRETING MEDICAL LITERATURE

STAFF OF REVIEW

Dermatology—James G. Thompson, Jackson
Otolaryngology—Charles R. Hume
Opthalmology—Edley Jones, Vicksburg
Obstetrics and Gynecology—J. F. Lucas, Greenwood
Orthopedics—Thomas H. Blake, Jackson
Public Health—Felix J. Underwood, Jackson
Pediatrics—Harvey F. Garrison, Jackson
Radiology and Roentgenology—Karl O. Stingily, Meridian
V. A. Pathology—H. N. Naumann, Jackson
Surgery—W. H. Parsons, Vicksburg
Urology—Temple Ainsworth, Jackson

PEDIATRICS

POISONING FROM ASPIDIUM DRUGS, Per Selander, Malmo, Sweden, Ann. Paediat. 173-259-66, Oct. 1949.

"A review of the literature indicates that most cases of serious or fatal poisoning from the use of aspidium drugs in the treatment of intestinal worm infestation occur in children. Two cases of fatal poisoning from the use of aspidium spinulosum in the treatment of tapeworm infestation are reported, one in a boy 4½ years old after a dose of 2 Gm. of the drug, and the other in a girl after a dose of 1 Gm. Both of these children were in good general health except for the worm infestation. From these and other cases reported in the literature, the author finds it impossible to determine a dose of aspidium drugs that is effective and at the same time harmless, especially for children who appear to be very sensitive to these drugs. In children, therefore, these drugs should not be employed. Aspidium spinulosum is probably the most dangerous."

COMMENT: It has been my unpleasant experience to have seen one child who is supposed to have been poisoned and who died from the administration of santonin by a splendid doctor friend of mine. I think the author's comments relative to the dangers of aspidium are well taken.

THE IMPORTANCE OF THE DIAGNOSIS OF OXYURIASIS, Emilio Aleman, Havana, Cuba, Rev. Cubana Pediat. 21:144-54, March, 1949.

"Of 120 children seen in private practice with vague gastro-intestinal symptoms and irritability, 24 were shown to be infested with oxyuris vermicularis by the NIH cellophane tape test. In none of these had the diagnosis been made by stool examination or actual observation of the parasites in the anal creases. The symptoms are: (1) anorexia 92 per cent; (2) irritability 75 per cent; (3) insomnia 62 per cent; (4) pruritus ani 58 per cent; (5) abdominal pain 25 per cent; (6) eosinophilia 33 per cent. Results of treatment with gentian violet therapy were most satisfactory."

Editor's Comment: "The National Institute of Health swab for detection of osyuriasis is simple and reliable. It has been previously described in the Quarterly Review of Pediatrics. Treatment of oxyuriasis in children is often unsuccessful because other members of the family simultaneously infested are not considered and serve as a source of repeated reinfestation."

COMMENT: It has been our practice to use the cellophane tape test method for a good many years. We find it very much more satisfactory than the results of the treatment especially with gentian violet. Our results with the use of gentian violet in treatment have not been as satisfactory as have been the author's.

V. A. PATHOLOGY

Addition to Case Presentation of February Issue, p. 337

ANATOMICAL DIAGNOSIS

(H. N. Naumann, M. D.)

1. Plasma cell myeloma of ribs and vertebrae; pathological fractures of ribs; infiltration of lymph nodes and soft tissues.
2. Myeloma kidneys; urea frost (uremia).
3. Bronchopneumonia.

Postmortem chemistry in cerebrospinal fluid: Urea 390 mg. %; Creatinine 4.5 mg. %.

FIRST ADMISSION: A 58-year-old, colored man entered the VAH, Jackson, Miss., because of a leg ulcer and diabetes which recently required an increase of insulin dosage from 15 to 20 units.

EXAMINATION: Chronic indurated ulcer, left leg, with multiple blebs on foot and toes and varicosities. Weight: 165 lbs.; BP 150/110. Heart enlarged, no murmurs. Urine: sp. gr. 1.023, Sugar 4+, Albumen 2+. Blood sugar: 233. CBC normal. Kahn neg. With increased insulin and local therapy the ulcer healed and patient was discharged after 40 days with 35 units PZI daily.

Second Admission (2 yrs. later): Pt. had done well reducing his daily insulin to 20 units without significant glycosuria. Four weeks after last admission he had a cold for 7 days followed by anorexia, nausea, vomiting and diarrhea. There were 8 to 10 liquid, brown stools daily without blood, mucus, abdominal pain, chills or fever. The urine had become much darker 10 days prior to admission. There was pruritus and difficulty in voiding for 2 months.

Examination: Mild icterus. Weight 165; Temp. 98.6; Pulse 80; BP 146/90. Lungs clear. Tenderness in right upper abdominal quadrant. Liver border palpable and tender. Varicose veins on both legs and both dorsalis pedis and posterior tibial arteries not palpable. Normal sized prostate; soft catheter passed without difficulty.

Laboratory: Urine: specific gravity 1.021, Sugar 2+, Albumin 3+, 8-10 RBC/HPF, 10-12 WBC/HPF.—CBC: RBC 5 mill; hematocr. 45; WBC 8,000; P 56 L 40 Eo4. Sed. rate 20; no Sickling.—Chemistry: BUN; Sugar 200; CO_2 52; NaCl 440; Protein Total 5.4; Albumin 2.3, Globulin 3.1; Cholesterol 310.—Liver function: Vandenberg direct positive, quant. 9.1; ict. 52; alk. phosphatase 14.2; Cephalin floc. 2+; thymol turb. 20.—Stool: occult bl. 4+; culture neg.

Course: Few days after admission 4-4-49, the liver increased in size and jaundice became more intense. Diarrhea and vomiting continued. Proctoscopy was neg. and barium enema was unsatisfactory. GI series showed deformity of duodenal cap; gall-bladder was not visualized. On 4-8-49 blood sugar 250; BUN 25, CO_2 50. Urine mostly sugar free with 20 to 35 units of insulin. Pt. became listless, drowsy and more deeply jaundiced. On 4-15-59 blood sugar 363, BUN 12, CO_2 40, NaCl 380; urine sugar 2+, acetone neg. He was given 2000 cc. 10% glucose and 100,000 un. penicillin q. 6 hrs. On 4-16-49 1000 cc. 5% anigen was given. Hiccoughs developed and oxygen and helium was administered. Soon after pt. had a convulsion and died on twelfth hospital day.

Anatomical Diagnosis

(H. N. Naumann, M.D.)

1. Yellow atrophy of liver (hepatitis), subacute; hepatomegaly, marked; obstructive jaundice, ascites.
2. Bile nephrosis.
3. Diabetes mellitus.
4. Cardiac hypertrophy, moderate.

STATE BOARD OF HEALTH

FELIX J. UNDERWOOD, M.D.

MEDICAL LIBRARY SERVICE

by

E. Louise, Librarian

May 1 will mark the fifteenth year of the Library's existence, and it is gratifying to review its record of accomplishments. Looking to the future, there is the satisfaction that the efforts of these fifteen years have counted for much in the public health program and have made possible a sound foundation for servicing present and future programs. The increasing usefulness of the library to so many entrusted with the protection of the health and welfare of the state's citizens enhances its position as a vital service division and encourages the belief that more adequate provision will be made for its future growth and needs.

Just as public health can never be static, neither can the library. It must be equipped to meet the constantly changing needs of the professions whose primary concern is protection against disease and promotion of health and well-being. It must be as up-to-date as its budget will permit in order that there may be available a record of the current advances in the medical sciences. It must provide tools to guide public health workers and others in the pursuit of their important duties, if there is to be maximum efficiency. These objectives are often difficult to achieve in view of the limited funds allocated to maintaining a library, to say nothing of provision of adequate space.

It is heartening to be able to report a good volume of service for the past year. Many new physicians were added to the borrower's list, as well as nurses, public health workers and others. Considerable time was given to acquaint newcomers with the library's services and upon request the librarian gave a detailed presentation to a group of public health nurse trainees, a class of sanitation trainees, and to a class of student nurses. Students taking extension courses on sociology and related subjects found the library a valuable source of help. The library serves so many student groups all over the state, especially at the college level, that if it accomplished nothing more, its contribution to health education and to an increased awareness of health services available, would more than compensate for the library's existence.

The library's primary function, however, is to serve the professions directly engaged in protection of health and to help keep them abreast of the current advances in medical knowledge regardless of where they may live. In this way the library has an opportunity to partially bridge the gap between the great medical knowledge available and the meagre portion of it which is actually applied. Until this gap is bridged only a relatively few people will benefit from the best medical care attainable, and according to the highly esteemed *New England Journal of Medicine,* "there should be no bragging about the quality of American medicine while there is still so much room for improvement. How many shepherds are content to graze their flocks in barren pastures with green slopes so easily attainable!"[1]

The library remains one of the best all around post-graduate schools for physician, public health worker, and others; and for those who would truly cultivate the "science and the art of medicine as well as its finer ethical standards, the library is a beacon of light, a source of truth and inspiration, and generous in its helpfulness.

The collection was strengthened through the addition of 64 books for the 5-months' period ending November 30, sixteen of which were by gift. Noteworthy was an attractive new edition given in memory of a deceased dentist, pointing up the opportunity of memorializing professional friends and co-workers with gifts that both endure and serve. Volumes of current journals added through binding totaled 144. The library received through the Medical Library Association Exchange and individuals 13 bound journals, 41 books, and 517 items needed to fill in gaps in files of journals maintained. The continued cooperation of the *Mississippi Doctor* editor in effecting exchanges with a considerable number of other state medical journals is acknowledged. The library is indebted to several large medical libraries for a number of rare books desirable for a medical collection. The spirit of giving and building is well exemplified in the library's growth over the years and much valuable material has come in this way.

It seems worth pointing out that the State Board of Health Library is in fact the State Medical Library and as such is a depository for all items bearing upon state medical, dental, and public health history. The work which is being done toward its development is certain to be cherished by future generations in addition to serving the present.

The library has recently received some very attractive volumes from the library of the late Dr. Leon S. Lippincott. Long-time resident of Vicksburg, where he was affiliated with the Vicksburg Sanitarium, Dr. Lippincott had collected many items bearing upon the state's medical and public health history. The State Board of Health library was pleased to have its collection of such material strengthened by the addition of a number of early volumes of the *Journal of the Mississippi State Medical Association* and other material which it did not already have. These will mean a great deal to those desiring to review the medical history of the state and in providing additional biographical data of its leaders.

In acknowledging the gift to Mrs. Lippincott, the librarian stated, "there is a great deal of satisfaction to be had in knowing that you can perpetuate the usefulness of these volumes for which he had so much regard. In each volume we are placing a gift book plate which will memorialize Dr. Lippincott. Library readers of the present and the future will peruse the volumes with pleasure and profit, and with no doubt a greater appreciation of the medical and public health achievements of yesteryear—the heritage of today."

The medical library is being constantly strengthened through the thoughtful gifts of local physicians and others. It gives a reference and loan service by mail to those living outside the city.

* * *

NEW BOOKS IN THE LIBRARY

1. Wilder, R. M.—*A Primer for Diabetic Patients.* 9th ed. W. B. Saunders. 1950.
2. Grant, L.—*The Challenge of Cancer.* U. S. Govt. Pr. Office, 1950.
3. Iowa State Medical Society—*One Hundred Years of Iowa Medicine,* 1850-1950. Athens Press. 1950.
4. Massachusetts Heart Assn.—*The Cook Book for*

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[1] editorial, *New Eng. Jour. of Med.* 243: 506-07, Sept. 28, 1950.

Low Sodium Diet. Mass. Heart Assn., 1950.

5. Marvin, H. M., Wright, I. S. et al—*You and Your Health.* Random House, 1950.
6. Horney, K.—*Neurosis and Human Growth,* The Struggle Toward Self-Realization. W. W. Norton, 1950.
7. Frank, Mary and Lawrence—*How to Help Your Child in School.* Viking Press, 1950.
8. Montagu, A.—*On Being Human.* Henry Schuman, 1950.
9. Toynbee, A. J.—*War and Civilization.* Oxford Univ. Press, 1950.
10. Joy, C. R.—*The Wit and Wisdom of Schweitzer.* Beacon Press, 1949.
11. Upham, F.—*A Dynamic Approach to Illness,* a Social Work Guide. Family Service Assn., 1949.
12. Klein, H.—*The Epidemiology of Dental Disease,* 1937-1947 (Collected Papers). Pub. Health Service, 1947.
13. Anderson, D.—*The Other Side of the Bottle.* A. A. Wyn, Inc., 1950.
14. Poncher, H. G.—*The 1950 Year Book of Pediatrics* (July, 1949-July, 1950). Year Book Pub., 1950.
15. Medical Clinics of North America.
    - —*Symposium on Psychiatry and the General Practitioner,* v. 34 No. 4, July 1950.
    - —*Symposium on Specific Methods of Treatment,* v. 34 No. 5, Sept. 1950.
    - —*Symposium on Infectious Diseases,* v. 34 No. 6, Nov. 1950.
    - —*Symposium on Clinical Advances in Medicine,* v. 35 No. 1, Jan. 1951.
16. *Yearbook of Dentistry* (Aug. 1949-Aug. 1950). Year Book Pub., 1950.
17. Wiggers, C. J.—*Physiology of Shock.* Commonwealth Fund, 1950.
18. American Red Cross, Blakiston.
    - —*First Aid Textbook,* rev. ed. 1945.
    - —*Home Nursing Textbook,* 1950.
19. Fed. Civil Defense Administration—*Health Services and Special Weapons Defense.* Govt. Print. Office, 1950.
20. National Security Resources Board — *United States Civil Defense.* Govt. Print. Office, 1950.
21. Sigerist, H. E.—*A History of Medicine,* vol. 1: Primitive and Archaic Medicine. Oxford Univ. Press, 1951.
22. Gibson, J. M.—*Physician to the World,* the Life of General William C. Gorgas. Duke Univ. Press, 1950.
23. Finch, J. S.—*Sir Thomas Browne,* a Doctor's Life of Science and Faith. Henry Schuman, 1950.
24. Gottschalk, L.—*Understanding History,* a Primer of Historical Method. Alfred A. Knopf, 1950.
25. Harrison, C. Y.—*Thank God for My Heart Attack.* Henry Holt, 1949.
26. Boland, F. K.—*The First Anesthetic,* the Story of Crawford Long. Univ. of eGorgia Press, 1950.
27. Earnest, E.—*S. Weir Mitchell,* Novelist and Physician. Univ. of Pa. Press, 1950.
28. Public Health Service—Med. School Grants and Finances Series:
    - Publication No. 53—*Conclusions and Recommendations.* Pt. 1, FSA, 1951.
    - Publication No. 54—*Financial Status and Needs of Med. Schools,* Pt. 2. FSA, 1951.
    - Publication No. 55—*Public Health Service Grants,* Their Distribution and Impact on Medical Schools. Pt. 3, FSA, 1951.
29. Baer, K. A. and Spencer, M., et al. comp.—*The Pituitary-Adrenocortical Function: ACTH, Cortisone and Related Compounds,* a Bibliography. Army Medical Library, 1950.

Woman's Auxiliary

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ATTENTION! COUNCILORS AND LOCAL PRESIDENTS

The state meeting is fast approaching and we are eager to have excellent reports of work attempted and accomplished the past few months. If your local auxiliary has not crystallized a plan of promotion that is specifically your own, it is not too late. What is the greatest local need? Is it public relations? There are dozens of challenging undertakings which you might consider for better service and good will to your community. Single out one or two and concentrate on them for individual achievement. That's our object this year: Doing good, being good, and publicizing it in our own locality!

AMA AUXILIARY BULLETIN

Haddon Hall will be the headquarters for the Annual Meeting of the Woman's Auxiliary to the American Medical Association, which will be held in Atlantic City, New Jersey, June 11-14, 1951.

Requests for reservations should be sent immediately to Dr. Robert A. Bradley, Chairman A.M.A. Housing Bureau, 16 Central Pier, Atlantic City, New Jersey.

"...the only drug we have seen that allays anxiety without clouding consciousness"

J.A.M.A. *140*:672 (June 25) 1949

Tolserol *(Squibb Mephenesin)*

- to alleviate pronounced anxiety and tension
- as an adjunct in the treatment of chronic alcoholics

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In anxiety tension states:

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Tablets, 0.5 Gm., 0.25 Gm.; *Capsules,* 0.25 Gm.;
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Medical Ethics*

OSCAR W. BETHEA, M.D.
New Orleans, La.

There is a difference between medical ethics, medical etiquette and medical economics, but in the practical affairs of life their fields often overlap or merge. I shall not try to discuss ethics alone, or to present a commentary on our well-known standards but will rather discuss some of the problems for the solution of which we have no authoritative pronouncement.

The practice of the healing art consists largely of science, skill and salesmanship: science which teaches us what to do, skill which enables us to work efficiently, and salesmanship which enables us to present our ideas in such a way that we may command confidence and cooperation from the patient and others concerned. In private practice it often takes more wisdom and effort to secure a thorough and sustained carrying out of a therapeutic program than it does to formulate it. One may know all of the medicine from Hippocrates to the day after tomorrow and still fall far short of successful service if this knowledge cannot be practically applied.

In general our ethical rules deal with the relationship of members of the profession toward individuals of the public and with the responsibility of the physician toward the state. Medical etiquette is concerned primarily with relations of members of the profession with one another. Medical economics has to do with the material aspects of practice. "Medical economics has always rested fundamentally on medical ethics."[1] The primary objective in all of these is to promote the welfare of humanity.

The Golden Rule, "Whatsoever ye would that men should do to you, do ye even so to them," would seem sufficient for the guidance of human conduct. Plato recognized four kinds of goodness—in later times called "The Cardinal Virtues"—Wisdom, Justice, Courage and Temperance.[2]. One whose life exemplifies these qualities will need little else in the way of directives.

> "Regulations and rules
> Are made for fools
> The wise don't need 'em
> The wicked won't heed 'em."[3]

It has been said that many a man is good because he is a deacon rather than a deacon because he is good. There is much about the physician's work that tends to ennoble—that lifts him up and places his feet on higher ground. Many disciples of the healing art live even above the high standards of the profession. It has been claimed that "Our philosophizing has less common sense than our conduct."[4]

Codes of medical ethics have an ancient and honorable history. They have been traced back to Babylon some 2700 years before the Christian Era. The subject was somewhat systematized in the Code of Hammurabi compiled about 2250 B.C.[5] Hippocrates in the oath that he prescribed and in his other writing placed ethics on a higher basis than it has since occupied. There has been a tendency to question his authorship—to claim that many participated in the Hippocratic writings.[6] Why worry? We should be perfectly satisfied with the case as we have understood it. This oath has come down to us, more or less intact. The Christian and Mohammedan groups have merely changed the naming of the deities.

Our present statement of ethics really goes back to the Englishman, Thomas Percival. During a period of internal stress and change in the Manchester Infirmary he was requested by the trustees to draw up "A scheme of professional conduct relative to hospital and other medical charities." A preliminary draft was printed for private distribution and constructive criticism, in 1794. Some of the leading medical men of his day collaborated in the revised and completed work which was published in 1803. This is the basis of our present code. "Before that the medical profession handled its ethical problems on the basis of the Greek traditions of good taste and personal honor."[7]

At the organizational convention of the American Medical Association in 1846 a committee was appointed to draw up a Code of Ethics. This draft was presented and adopted at the first regular meeting of the Association in 1847. The original title of "Code of Medical Ethics" was changed to "Principles of Medical Ethics" in 1903. It was somewhat rewritten in 1912, and last revised in 1949.[8] I believe that no physician should be without a copy of this excellent work. It would not hurt to make a practice of rereading it once a year. It is well written, comprehensive, and "It can be misunderstood only by him who wishes to misunderstand it."[4]

Physician-Patient Relation

Unquestionably the most important considerations in the code of medical ethics are those concerned with the physician-patient relationship. "It is on the physician-to-patient relation that the great medical tradition rests."[9] While this applies to every phase of practice, it is nowhere more fully exemplified than in the work of the general practitioner. "A family physician is more than a prophet in his community; to many he is the law itself—to others a Father Confessor."[9]

As a young pharmacist I often observed that many physicians tried to avoid taking patients who were hard to handle, or they tried to get rid of such individuals at the earliest opportunity. When I stepped out of the station in the city where I was to study medicine, I saw across the street a large sign for Pickwick Clothing. Their slogan was "We fit the hard to fit." It occurred to me that here was a firm that had made an immense success by not only catering to, but actually inviting, the problem individuals in their field. It not only suggested to me the advantage of being a "Pickwick Doctor" but has largely influenced some of my attitudes since that time. Whenever I have failed to make good with a problem case, I have felt a distinct sense of personal failure.

During the first major operation I witnessed, one of the assistants indicated a certain vessel in the operative field and asked the distinguished surgeon, "Doctor, what vessel is that?" The surgeon calmly replied, "I don't know," and without apology went ahead with his work. I had been rather accustomed to having our medical men of that day avoid the use of any such expression. I realized that the physician who said he didn't know had risen immeasurably in my respect and admiration. "Don't be afraid to say 'I don't know'."[10]

From time to time every faculty member is approached by a student asking for advice as to the relative advantages and disadvantages of serving an internship or residency in a private or in a state institution. Only one phase of this large subject will be considered here. In a charity hospital the tendency is too often to treat the disease rather than the patient. In such an atmosphere the young physician is not always schooled in the kindness, consideration and courtesy that is so necessary in private practice. He often grows accustomed to giving his orders with the attitude of "do this or else." He is not constantly faced with the necessity of commanding that full measure of respect and confidence that will enable him to meet the requirements of his later work. He does not learn salesmanship. My advice to students is: By all means go to a state institution if you wish, but with the realization that the physician-patient relationship to be found there is not always that which will prepare you for the practice of medicine. You must learn that extra.[11] Attention has recently been called to some of the unfortunate customs that obtain in ward rounds in charity institutions.[10] This applies especially to the free discussion of the patient's condition, not only in the presence of the staff but of the numerous other patients in the ward; a lack of delicacy, of professional secrecy and of the many other factors so essential to meeting our ideals of how medicine should be practiced.

Another interesting problem that faces every young physician may be illustrated by the following incident. In my earliest days of practice I was called in to see a woman for an acute rectal impaction. When this condition was relieved, I had fulfilled my mission and received the impression that they expected me to fold up my little grip and go home. But I had noticed that the patient was pale, undernourished, nervously tense, and the same description would apply fairly well to the husband. A few questions revealed the fact that they were both definitely below par. In the matter of recreation, rest, diet, etc., there was much room for improvement. I suggested that they might come to my office for a study of their cases. The end results were that I was able to render a service to the household far beyond the temporary relief of the condition for which I had originally been called. I relate the sequel with some reluctance; when I was finally asked for a bill, like most young doctors of that day, I hesitated to send a statement for a substantial amount. After a few days of worry, in a period of desperation, I decided that I had rendered a special and particular service, doubled the bill as it stood on my books, and sent it in. They promptly doubled it again and sent me a check.

One of our greatest problems is trying to convey to the patient our understanding of his case. He naturally wants to know not only the diagnosis but the prognosis. It is usually advisable for us to give as much encouragement as the conditions will justify. Typical of such cases is the patient presenting subjective findings to confirm such a diagnosis. Levine has remarked that it is rather embarrassing to pat one of the patients on the back and tell him that he is as sound as a dollar, and have him drop dead on the way home from our office.

Let me illustrate with an incident that has been duplicated probably many times by all of you. Mr. H. had an organic heart condition that carried a life expectancy of about three years. He told me that he had reached that age and station in life where he could hear the truth and take it; that he wanted to arrange his affairs as he had a considerable family and property. I explained to him that we could not see an hour ahead, but that men in his condition lived an average of about three years. Within a few months after the three-year period had expired he discontinued my services, intimating that I evidently had not known what I was talking about. He lived only a few months longer.

The patient's family deserves every possible consideration. At the same time, however, they often present some difficulty. Mr. L. was about seventy years of age when he came in for a general examination. He was found to be in excellent condition except for moderate arteriosclerosis. I went over my findings with the old gentleman and the son who came with him. I tried to explain arteriosclerosis and its significance in a man of his age. The next day the son came to the office and rather excitedly asked if I thought his father would last until his brother from Canada could reach New Orleans. I found that they had called in the entire family from the four points of the compass, in the hope that most of them could get there in time to participate in the parental blessing.

It has always been difficult for me to try to explain to a patient's family that the symptoms about which the patient has been complaining are not the results of organic disease. Psychosomatic disturbances are more easily diagnosed than they are explained to the relatives concerned. Mrs. S. had been convinced for some time that she was seriously ill. She had run the gamut of tuberculosis, cancer, and at the time I saw her it was heart disease. There were several deviations from the normal that would explain many of her complaints. As is so often the case, she had misinterpreted and exaggerated the evidences of minor ailments. The major factor was hysteria. I had the husband come to my office and explained to him that his wife did not have heart disease or any other serious physical condition. I explained her nervous status, outlined a proposed plan of treatment and tried to secure his cooperation and that of the rest of the household. I thought that I had delivered myself a masterpiece. After leaving my office, he drove directly home, and told his wife that he had just had a talk with the doctor who had said there was not a damned thing wrong with her, therefore, to shut up and get up. Needless to say, it took me quite some time to re-establish my usefulness in the case.

Psychiatrists tell us about patients who develop defense mechanisms and resort to various and sundry schemes to avoid having to face the realities of life, or to attain some particular end. In everyday practice it is sometimes not so difficult to decide what is wrong as to decide what to do about it. Mr. L. telephoned one night and, between sobs, stated that his wife was dying—might be already dead. On entering the home I found the daughters praying. The husband was helplessly walking the floor, wringing his hands and weeping. The patient was stretched out on the bed with no visible evidence of life. The pulse, blood pressure and all other physical signs were normal. I knew the patient well, so after an examination, I stated that it was not serious and that she would soon be all right. I administered a sedative by needle and was soon able to leave the family without a ripple disturbing the calm surface of the ocean of their content. The next day the patient stalked into my office with the opening statement, "Say, doctor, you played hell at my house last night." I mildly asked for information and was told, "Well, things have not been going right for me lately, and it was all coming my way when big you had to come bursting in and spoil it all." I laughingly assured her that she must pardon my ignorance, etc. When she started to leave, she stopped at the door and had the decency to blush as she said, "I feel like I am going to have another of those spells tonight." It took me some time to talk her out of it.

We hear much today of euthanasia. We are even reminded that while we are told, "Thou shalt not kill," that "we need not strive officiously to keep alive," and that "there is no moral obligation to prolong the act of dying."[11] My understanding is that two inescapable obligations of the physician are to relieve suffering and to prolong life, but that the relief of suffering should not be attained by doing anything that would shorten life or leaving undone anything that would prolong it. I have frequently had the family protest against my prolonging life in an apparently hopeless case by the use of stomach tube feedings or intravenous fluids. I have tried to plead my case somewhat as follows: "When patients are too sick to go to the table, we bring food to the bedside; when they are unable to feed themselves, we have them fed; when they can no longer drink out of a glass, we use a drinking tube; when they can no longer use a drinking tube or can no longer swallow, we use a Levin tube or an intravenous drip. There is no place along this line at which we can feel justified in calling a halt." I have retired from several cases where the family insisted on their objections.

There is another physician-patient problem that touches public relations. Particularly among the laboring classes, it is quite common for individuals to have sick benefit policies. Many of these pay only if the patient is laid up for a week, and some carry a considerable amount of this type of insurance. Employers often continue all or part pay for reasonable time, so the patient may profit financially by staying sick. It is often exceedingly difficult for the physician to maintain his friendly relations with his patient and honestly discharge his obligation to the public. Many of you know my brother who has done several periods of army medical service in Texas. I remember seeing a letter that he received during his first few months in practice. It was from a Negro woman and started off, "What for you say I ain't disability." While we are on this subject, there are two other problems that I will mention. One of these is the considerable burden placed on the medical profession by the insurance companies and by various agencies asking for reports of examinations or treatment, often going back many years. The remuneration is nothing, or a comparative pittance. The forms submitted are often unnecessarily elaborate. Another is that some organizations want duplicate or triplicate forms filled out. Except where these are from the government, my conscience is perfectly clear when I fill out one form and advise that they can make as many duplicates as they see fit.

PHYSICIAN-TO-PHYSICIAN

It may be said without dispute that "There is nothing that you can hope for from your medical life half so precious as the respect and affection of your colleagues."[9] I once heard a young physician remark, "There is nothing I love as much as physicians—except more physicians." He made an outstanding success in his chosen career. We can even admire in some respects the attitude of the original Dr. Mayo when he said, "I did it for him because he is a doctor—damn him." From the pre-medical student to the worn out and retired old practitioner facing the sunset, we should feel a sense of loyalty and camaraderie and be ready with the word of encouragement or commendation, and have ready the helping hand.

There are few things that I appreciate more than to be asked for advice by one of the younger group. I still remember with deep gratitude the assistance that I many times obtained from the older men during my early years of practice.

One Christmas morning not too long ago, I answered the ring of the door bell to find a rather worried looking young medical friend with a package under his arm. He explained that the local undertaker had sent him a box of fine cigars. He did not want to accept them, was distinctly offended and wanted to know what to do. I told him that to raise a fuss might cause complications, just to give me the cigars and go quietly ahead and ignore the whole matter. We were both happy.

The young physician is often asked by some older man to see a patient for him. It is an expression of confidence and should be appreciated, but it sometimes leads to difficult situations. What should he do if that patient calls him a week or a month later? One writer has suggested that he may take over the family's work if offered to him after a period of six months. I feel that each case must be individualized and all the factors carefully weighed. Sooner or later there is apt to be some unhappy development. In my first year of practice I was asked by Dr. S. to see a patient in my neighborhood as he could not leave his office at that time. About a week later the patient phoned that he had a very sick son and asked that I come at once. I asked if he had called Dr. S. He replied that he had not, that he wanted me. I insisted that he first try his regular physician who would either come or ask me to do so. There was some delay, and the boy died before Dr. S. reached him.

When one physician sees a patient for another physician, or when one sees a patient of another in an emergency, only temporary treatment should be ordered. I recently had a young confrére visit one of my patients to relieve a severe pain until I could get there. He wrote a 32-dose prescription. One wise procedure is to leave a memorandum of findings and a copy of any prescription, for the regular attendant. The patient's physician can hardly continue the use of an unknown preparation and needlessly to discontinue it may do an injustice to the patient and be construed as a reflection on the one who wrote it.

When the regular medical attendant sends a patient to a consultant for a diagnosis, a difficult situation sometimes arises, particularly when the patient comes from another city. The home physician has often induced the patient to come by building up the consultant as the last word of authority. Theoretically, the patient should usually be returned to the sending doctor without any discussion with the patient of the findings and conclusions, all these being mailed to the regular attendant. The patient however often feels that he has gone to much inconvenience and expense to consult a specialist in his particular condition, and he expects and demands a heart-to-heart discussion. Some physicians, in sending a patient, ask that this be done, but most object to it. Usually the consultant can merely explain that he will have to secure his final reports on the tests ordered and that he will then be better able to draw his conclusions, and that it will all be sent promptly to the patient's doctor. Sometimes it is not so easy.

In a hospital consultation there is one problem that we often have to face. Surgeon A wants an internist consultant to give his opinion and drop out of the case. Surgeon B wants and expects the consulting internist to take over the medical phase of the case. The expectation of Surgeon C is unknown and his real wishes unknowable.

Consultations are called for the welfare of the patient. We find that many consultants fall into one of two general classes. One of these tends to approve everything that has been done and seems to hesitate even to make a suggestieon. He cordially congratulates the family on their selection of the regular attendant. As a young man in general practice I called in one of this type. He was a truly great clinician but offered no suggestions. I explained that the patient was a warm personal friend and that I really wanted help. His reply in substance was "You have treated many cases of this condition. You have your tools and are accustomed to using them. You have evolved a plan, tried it often and found it good. If I suggested something new and you forsook your accustomed procedure and ventured into something different, you and your patient might be nothing better, but worse."

Another time I had a consultation of this type. One of my old professors made a careful study of one of my cases, and we retired to a private room. He chatted a few moments and started to leave. I stopped him and insisted on information and help. He smiled, poked me in the abdomen with his finger and said, "Watch out, Bethea, you are getting fat." That was all.

Another type of consultant is inclined to change everything and especially, to institute his own favorite therapeutic programs. He asks for more x-ray studies, more laboratory work, a different diet, change in ventilation, and so on. He phones two days later to know how the patient is progressing on the new plan.

All consultations are not necessarily too formal and serious. The nurse once told me of two of my stout, elderly medical friends meeting at a home where she was the nurse. After the examination, they retired to another room for the conference. She could hear that an argument was in progress, and finally one of the doctors opened the door and called for a tape measure. A few moments later, on going into the room for something for the patient, she found the two doctors measuring each other's abdominal circumferences and two five dollar bills lying on the center table.

As a pharmacist in a small city, I once heard some of the doctors chuckling over a little scheme they had just worked. Dr. C. who was liked by all, and generally recognized as a capable man, had one bad habit. When called into consultation he would first go over all the details of the case with the regular attendant. Later when he sat by the bedside of the patient, he would use this information impressively. He would astonish the patient and family not by asking, but by telling the patient, "You have a pain here" or "an ache there." "You don't sleep well the latter part of the night," etc. Some of his conféres had called him on the case of a prominent citizen and had given him all the preliminary data wrong.

There is one detail touching ethics and economics that I shall mention for what it is worth. That great surgeon, the late Dr. Carroll Allen, once good-naturedly mentioned to me that I often charged his patients two or three times as much when he called me in consultation as he charged when I called him. I think I sold him the following explanation. When I called him to pass on an abdominal pain, the case was thoroughly worked up. He looked over the pertinent data, asked a few additional questions, palpated the abdomen, and either suggested surgery, or gave surgical clearance. When he called me to pass on a circulatory apparatus, it usually required my taking a history from grandfather on down to today, and making an examination from the eye grounds, to the plantar reflexes.

There are good, practical reasons back of all of our physician-to-physician customs in etiquette. For example, the regular attendant entering the patient's room ahead of the consultant enables him to greet those present unhindered, and to introduce the consultant with more ease. It acknowledges to all concerned that he is the "Master of Ceremonies." The consultant leaving the room first permits the patient's physician to have the last word and it strengthens the impressions that those concerned still have him in charge of the case.

Personal Considerations

In reviewing the rather extensive literature on medical ethics and its related subjects, it has seemed to me that too little has been said about the duty the physician owes to himself, his family and to his patient, to keep himself in the best possible state of well-being. It will enable him not only to be of service for more years, but to do better work each day. There is no use for me to outline a program of rest, sleep, recreation and work; of proper eating, of moderation and temperance — you know these things as well, or better, than I do. As Osler said in another connection, "It isn't not knowing but not doing that gets us into trouble." We should consider it an obligation and a privilege to be calm, cheerful and kindly. I have suggested only one specific prayer to those looking to me for guidance—"Lord, help me to live this day straight, clean, cheerful and efficient."

I learned an impressive lesson when quite a young man. I happened to see a letter written about me in which was the statement, "If you churned his milk of human kindness, it would make limburger cheese."

The physician should cultivate that philosophy of life which will enable him to meet the requirements of today to the best of his ability and to lie down at night content, without one regret for "dead yesterday," or one anxious thought toward "unborn tomorrow."

"I may not like the way the cards
are shuffled
But still I love the game and want to
play,
So through the long, long night, will
I unruffled
Play what I get, until the break of
day."

We must avoid worrying about that which is immaterial or that which cannot be controlled. At the first University faculty reception which I attended, I heard a short sermon. With much feeling, almost bitterness in her voice, the wife of a revered old clinician said to my wife, "Don't let your husband ruin his life by worrying about the patients who quit him." We must remember that most of these individuals quit some other physician to come to us.

If we will add to all this, fixed habits of cultural reading, professional study and attendance at medical meetings, we should grow into the ideal envisaged by Robert Louis Stevenson.

"There are men and classes of men that stand above the common herd; the soldier, the sailor and the shepherd, not infrequently; the artist rarely; rarer still, the clergyman; the physician almost as a rule. He is the flower (such as it is) of our civilization, and when that stage of man is done with, and only to be marveled at in history, he will be thought to have shared as little as any in the defects of the period, and most notably exhibited the virtues of the race. Generosity he has, such as is possible to those who practice an art, never to those who drive a trade; discretion, tested by a hundred secrets; tact, tried in a thousand embarrassments; and what are more important, her clean cheerfulness and courage. So that he brings air and cheer into the sickroom, and often enough, though not so often as he wishes, brings healing."

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The Presence and Recognition of Common Urological Problem*

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It is not our intention to discuss any of the more complicated urological procedures or any one urological complaint in detail but rather to bring evidence to show that urological illnesses are common here and further to show some methods used in their diagnosis.

Urology is that department of medicine which has to do with the urine and urinary tract and as now used this term includes the genito-urinary tract, male and female. All ages are included. Much of our work is, as you know, with the older males. However, there are many often neglected urological lesions in children and more and more of these are filtering in to us. Our patients in Greenville have run from less than one-day-old infants to men in their nineties.

Of our major surgical cases of the last year approximately 60 per cent were for prostatic obstruction, 12 per cent for carcinoma excluding carcinoma of the prostate, 14 per cent for stone or its complications, and the remaining 14 per cent for other urological procedures. These figures apply to hospital cases coming to genito-urinary surgery and do not include minor surgical procedures and non-operative cases, or the large number of office patients whose complaints vary from an urethral discharge to tuberculosis and cancer of the genito-urinary tract.

We feel in this specialty that one can come nearer arriving at a correct diagnosis than with any of the other organ systems. Seldom is it necessary to schedule any urological surgery as an exploratory this or that. Certainly it will not be necessary for all of you to become competent cystoscopists, roentgenologists, etc., to recognize most of the urological pathology coming into your offices. How, then, is it to be done? A careful history may be the deciding factor in arriving at a correct diagnosis. Again, serious pathology may be present without symptoms to indicate it. Then, if this is the case a careful examination is also essential in every patient.

First, sit and listen to the complaints. Write them down. Ask specific questions. Is there pain? Renal pain is located at the site of the kidneys, usually under the lower ribs posteriorly. What is the character, and particularly the reference of the pain? What is the location of this backache they complain of? Is it renal? If so, is it unilateral or bilateral? Is there painful urination? Is there frequency of urination, urgency or nocturia? What is the character of the stream? Is it small with poor force? What is the quantity passed at a voiding? Is the urine bloody, cloudy or clear? What is the duration of the present condition? Has the illness been attended by chills and fever? Have there been previous similar episodes in the past? A past history of stones, gonorrhea, strictures, hematuria, etc., is of importance.

Then the physical examination. Assuming a complete physical examination is done in every case will only emphasize the genito-urinary tract, including a rectal and vaginal examination. In doing this examination, details of the history should be kept in mind and correlated with it. The nature of the complaints will generally determine whether the upper or the lower urinary tract is considered first in the examination. Assuming it to be a backache or pain in the renal areas examine the patient lying down as well as standing with bimanual palpation. Normally, neither kidney is easily palpated. While, if the kidney is extremely large, it may be seen through the abdominal wall. Is there tenderness in either renal area or muscle spasm in the region of the costovertebral angle? A most valuable aid in diagnosis is the so-called Murphy punch to the renal areas. Normally, a fairly firm blow to this area produces a slight discomfort. Is one side more tender than the other? This is of particular significance. In hydronephrosis or over-distention of the kidney there will be tenderness in proportion to the amount and particularly the acuteness of the distention, while in a perinephritic abscess or carbuncle of the kidney the patient can literally be lifted out of the bed by the pressure of one little finger in the costo-vertebral angle.

Is the patient tender along the course of either ureter? Not infrequently there will be considerable tenderness at the site of a calculus passing along the ureter. With this calculus there may well be pain and tenderness in the kidney of the affected side due to back pressure of urine. The typical reference of pain to the testis or to the base of the penis is classical. In an acute ureteral colic one seldom has chills or fever and usually has microscopic blood in the urine with only a few pus cells. If there is renal pain, associated with chills and fever and pyuria, pyelonephritis is a good bet. A low backache is a common complaint among women and is seldom indicative of renal pathology but frequently occurs with cystitis.

This brings us to the specimen of urine for examination. In the female have some easy system worked out whereby a catheterized specimen can be obtained on all women with urological complaints. Have good exposure, careful, simple cleansing of the meatus with a mild soap and water, wash your hands, use sterile catheter and what could be easier? Urine cultures might be easily available where laboratory facilities are limited.

With the urological female on the table for catheterization the lower urinary tract examination can proceed very easily. What does the meatus look like? Is it red and inflamed? Is the redness due to a caruncle or is it a simple eversion? Are Skein's glands palpable or can pus be expressed from these? Examine her Bartholin's glands while here and then slip in a vaginal speculum and examine the vaginal walls and cervix. Cystitis is not an uncommon occurrence with vaginitis or endocervicitis. Remember particularly in little girls that the so-called pyelitis is frequently just a pyuria due to a cystitis which is secondary to a nonspecific vaginitis. With the female patient still on the table the urethra can easily be tested for strictures by means of diagnostic bougies or if these are not at hand an old Van Buren sound is surely around some place. Sterilize this, too, before passing it. If the patient complains of stress incontinence, that is loss of urine with coughing, sneezing, etc., have her bear down and examine for the bulging of a cystocele or urethrocele. Then have her cough and demonstrate the incontinence.

Many of you have seen women patients who complain bitterly of frequency, and dysuria usually worse when on their feet and commonly associated with low backache. You have examined the urine, found it to be free of pus. Don't tell the patient she doesn't have anything wrong with her. You might be right but the chances are you might be wrong. A chronic condition involving the bladder neck and posterior urethra may be present. This condition may be suspected but the diagnosis is made by the use of the cystoscope. Don't just tell her, then, there isn't anything wrong with her when she is nervous and hurting.

Now come to the examination of the urine in the male. Is an urethral discharge complained of or expected? Examine for this first including a smear for staining. Then, ask the patient to void in your presence and watch his stream for size, force, etc. Collect the first urine voided in one glass and the remainder in a second glass. Hold them up to the light and compare the two. If the first is cloudy and the second clear there is probably infection in the urethra and the bladder is free. If both are cloudy, the bladder, kidney, or kidneys, may be at fault. If the urine is smoky suspect microscopic blood. Of course, gross blood will be seen easily. Is it mixed or does it occur at the beginning or end of the act of micturition? Again, a simple microscopic examination will tell you if blood or pus is present in the specimen or whether the cloudiness is due to phosphates or urates which may occur normally. A complete urinalysis will also include an examination for casts, crystals, etc., as well as tests for albumin and sugar. Specific gravity determination may be of considerable value, particularly if concentration or dilution tests are done.

Hematuria, gross or microscopic, is so important as to demand immediate investigation while the patient is still frightened. Rarely is medicinal treatment indicated or of value. Bleeding may disappear and fail to recur for months with precious time being lost. Painless, apparently causeless, hematuria is cancer until proved otherwise. Later cancer of the bladder produces symptoms of frequency, nocturia and dysuria, early only blood. With severe infection of either bladder or kidney, hematuria is not uncommon. Stones may cause any degree of hematuria. In the field of the internist acute hemorrhagic nephritis is frequently a cause of hematuria.

Is the bladder in this man visible or palpable? If it is and the patient has complained of diminished size and force of the stream with hesitancy in starting, dribbling, straining, etc., you know it's due to an obstruction to the outflow of the urine from the bladder. If uremia is impending be quick about this examination. The easiest thing in the world is to put on a rubber glove, let him assume any one of a number of positions, put some surgical lubricant on your finger and do an examination of the prostate rectally. Then, is the gland large, is it boggy, tender, fluctuant, symmetrical, nodular, hard, fixed or freely movable? A large gland, benign or malignant or an abscess of the prostate might be responsible for the obstruction. Onset of the abscess would be more acute and accompanied by fever and much pain. If the prostate is small and we are still dealing with urinary retention next examine the penis and urethra. Strictures are most likely. Again, the diagnostic bougies or the sounds and filiforms are brought out and sterilized. If the patient complains of perineal swelling along the course of the urethra examine carefully for strictures. Little will be accomplished except to produce a sprinkling pot perineum by incising an abscess in this region. Less common causes of obstruction in the lower urinary tract are urethral calculus in both male and female, tumor of the bladder situated at the bladder neck, foreign bodies introduced by patient, tight meatus, etc. Some of our youngest patients have been those born with an imperforate meatus.

Never, never fail, when doing a physical examination, to examine the prostate routinely in every patient, fifty and over. Do this whether symptoms referable to the K.U.B. tract are complained of or not. Cancer is diagnosed this way almost entirely preoperatively and so very often we see them too late to get beyond the entire growth. Not uncommonly, the back x-rayed for persistent pain will show metastatic carcinoma as the first sign pointing towards carcinoma of the prostate. Many times obstruction is late or need not occur in cancer of the gland. You can tell a hard, fixed irregular surfaced gland is carcinoma as well as anyone else and this is the way it is diagnosed. Prostatitis is as easily diagnosed as putting the expressed secretion under the microscope and looking for pus.

Examination of the male genito-urinary tract includes careful attention to the scrotal contents. Remember that the testis and epididymis are separate and distinct organs although closely associated together in the scrotum. Tumors of the testes are relatively easily differentiated from inflammatory processes in the epididymis. If a hydrocele is present tumor can easily be overlooked. With epididymitis, redness, tenderness of the epididymis with thickening of the vas make the diagnosis easy. A chronic draining sinus from the epididymis through the scrotum almost always means a tuberculous epididymitis. Remember that orchitis occurs in mumps and that in the absence of mumps an enlargement of the testis is cancer until proved otherwise. The undescended testis also deserves your attention.

Lesions on the penis should not be called chancre unless lues can be proved by dark field or Wassermann, and if chancre, should respond quickly to anti-luetic therapy. Remember, cancer here is quite common.

Penile lesions in children usually result from a prepuce either too tight or too long. Circumcision should be done as a prophylactic measure in all male babies. Mild degrees of hypospadius is not usually of serious significance.

However, children showing ANY degree of genito-urinary pathology should have a complete investigation and correction instituted early. Don't say they'll outgrow it. They don't outgrow such lesions as uretero-pelvic junction and vesical neck obstruction. Kidneys are lost and irreparable damage is certain.

Persistent enuresis is a problem. First, genito-urinary pathology must be ruled out.

Stones, as well as tumors of the bladder and kidney are not uncommon in children. Look for them.

In summary, let me say the entire history and examination in the average genito-urinary patient requires little more time than it has taken to tell about it. Remember these things.

Chills and fever indicate a probable infection. Unilateral back pain under the lower ribs is kidney pain until it is ruled out. Low midline back pain is often associated with cystitis and lower urinary tract disturbances. Frequency of urination with small amounts passed means urinary pathology, generally bladder or urethral. Difficulty in starting and a small stream means prostatic obstruction, strictures of the urethra or less commonly a neurological disorder. Stricture or an enlarged gland can be very easily differentiated. Never neglect examining the prostate. Cancer of the gland is diagnosed rectally. Examine the urine. Much can be learned by looking at the urine through a glass. Blood at the onset of the act of micturition originates in the urethra, at the end, from the bladder neck or prostatic urethra, while blood throughout the act may come from kidneys, ureters, bladder or prostatic urethra. Catheterize the female. Tumor of the testis if overlooked is fatal. Stones in the urinary tract can be confirmed by x-ray in 95 per cent of the cases. The examination of the urinary tract includes inspection, palpation, and percussion starting with the kidneys and working down. Laboratory, cystoscopic, and roentgenological procedures, when necessary, should confirm the impression gained by a careful history and physical examination.

Pancreatic Cysts*

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REPORT OF CASES

Cysts of the pancreas may be divided into four groups: adenocystomata, retention cysts, degeneration cysts, and pseudocysts. Of these four groups the pseudocysts are the most frequent. The four cases I am reporting this afternoon fall into this classification. In these pseudocysts one finds blood, inflammatory exudate, and pancreatic secretions. A characteristic flocculent fluid has been present in all my cases. Their origin lies practically always in an attack of pancreatic necrosis or trauma, hence the floccules. They have no wall of their own but are bounded by the peritoneum of the omental sac and of adjacent organs. Foci of necrosis in the gland break down and then erode the capsule anteriorly, thus entering the lesser sac, where the fluid collects. The fluid is according to its age either yellow with many shreds in it, or, if more blood is present, brownish-green or even blackish. Small amounts of pancreatic ferments can often be found by the pathologist.

SYMPTOMS AND DIAGNOSIS.

There are no pathognomonic symptoms. Physical examination usually reveals an elastic swelling which is situated nearly always in the mid-epigastrium but with greater spread to the left than to the right. As the cyst grows it extends forward and may present itself at different levels. It may extend upward presenting above the lesser curvature of the stomach, or straight forward flattening out the stomach, duodenum or transverse colon. It may even present below the transverse colon or far to the left or right, but as a rule near the mid-epigastrium. Since these cysts are most frequently caused by an attack of pancreatitis or injury to the pancreas, it is necessary to take a careful history with this in mind although in many of the recorded cases an exact etiology is undiscoverable. During the period of gradual increase in size the patient complains only of indefinite symptoms, chiefly gastric distress and a feeling of weight in the epigastrium, both of which are felt in the left side as well as in the middle of the epigastrium. Rapid loss of weight is often observed. This is due to pressure on stomach and inability to eat rather than any loss of internal secretions from the pancreas.

The diagnosis, if made preoperatively, is made partly on the above history and partly on the physical examination. A tense, elastic swelling situated in the upper and mid-abdomen, under the left rectus muscle should be considered as a pancreatic cyst until proved otherwise. If the cyst projects above the stomach one had to consider an echinococcus cyst of the liver or a liver abscess possibly of amoebic origin. X-ray films of stomach and colon may be of help. I have never found them of much diagnostic aid. In fact, I have been more confused by the bizarre deformities presented. Omental cysts and cysts of the ovaries with long pedicles can usually be ruled out by their free mobility. Hydronephrosis of the left kidney should be considered but in this condition the mass extends into the groin and can be ruled out easily by cystoscopic examination and pyelograms.

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*Read at Northeast Mississippi Medical Society, December 14, 1948, Tupelo, Miss.

The aspiration of the cyst for diagnostic purposes is not to be advised, although I frankly admit having tried this in one of my cases thought to have a liver abscess. There are no laboratory tests such as for amylase, etc., that are of any help as the internal secretions of the pancreas are rarely ever altered.

TREATMENT.

Operation is definitely indicated in all cases of pancreatic cyst of whatever variety. Marsupialization with evacuation of the necrotic debris contained in the cavity usually suffices for the pseudocysts. Extirpation of the cyst wall however is necessary to effect a cure in the true cysts. The operation of incision and marsupialization of a pancreatic cyst is simple enough. The incision is made over the most prominent part of the tumor and the abdomen opened. The cyst wall is not usually adherent to the anterior abdominal wall, but it underlies it closely. The stomach and colon are pushed upward and downward, as the case may be, and the cyst wall presents itself. The wall is grasped with forceps, a small incision made in it and aspirator introduced. After the fluid is evacuated the interior of the cyst can be examined with the finger or suitable light and the relationship of the sac to the pancreas can be determined. At this time it is also possible to determine whether we are dealing with a pseudocyst or true cyst of the pancreas. The lining of a pseudocyst is smooth, whereas the lining of a true cyst shows papillomatous projections into the cyst cavity. Extirpation alone offers cure in these cases. Fortunately, I have had no true cysts in my small series. The contents of the cyst should be examined for pancreatic ferments, the discovery of which clinches the diagnosis. But in many cases the ferments cannot be demonstrated. The edges of the incision in the sac are then sutured to the edges of the abdominal wound and a fairly large hard rubber drainage tube inserted and sutured in place. The cyst cavity can then be irrigated with normal saline or an irritating solution such as sodium morrhuate, 5%.

Two of the cases I have had were female and two males. Their ages varied between 11 and 67 years. I would like to report these cases briefly.

Mr. J. E. L. was brought to the hospital complaining of nausea and vomiting with inability to retain food. He gave a history of having been seized with a colicky pain in the pit of his stomach about three weeks prior to admission, while doing light farm work. After the onset of this pain he was nauseated and unable to retain food or water. He was treated for two weeks in another hospital where he received fluid and nourishment by vein. His past history revealed that he had suffered from stomach trouble for eight years and had lived on soups, milk and eggs during this time. He had been aware of a knot in the pit of his stomach for the past two years and that this knot varied in size from time to time. He did not recall ever having had an injury. Ten years ago he had what he called a bloody diarrhea and ever since then had had a tendency toward loose stools. He described the pain in his upper abdomen as dull in character except after taking food and then it was colicky in type. The family history was irrelevant to the present condition. The physical examination revealed an elderly white male emaciated and dehydrated, obviously chronically ill. Temperature 99 to 101, pulse 90. HEAD: EEN&T essentially negative. No evidence of jaundice in the sclera. Neck showed no glandular adenopathy. Chest, heart and lungs essentially negative. ABDOMEN: There was a visible mass in the epigastrium. This mass almost completely filled the epigastrium but extended slightly more to the left than to the right. It was round in contour, tense to the touch, dull upon percussion, unable to distinguish the liver margin from the mass. X-ray examination was non-contributory. Urine analysis showed one plus albumin, negative for sugar, few hyaline casts, 3-5 pus cells per high power field. Stool examination was negative for amoeba or other parasites. Blood analysis—4,150,000 RBC, 89% Hemoglobin, 85% Polymorphornuclear cells and 15% Lymphocytes. N.P.N. 54.

Laparotomy was performed with a preoperative diagnosis of amoebic abscess of the liver or pancreatic cyst. The abdomen was opened by a high left paramedian incision. Lying directly beneath the abdominal wall was the stomach and transverse colon flattened out by a large, tense, cystic mass posteriorly. The liver, gall bladder and other organs were normal. An effort was made to find a place on the cystic wall to be marsupialized to the abdominal wound but due to its location and tenseness this was not possible. Therefore, an approach was made through the gastro-colic omentum and the cyst wall opened and approximately one quart of brownish flocculent material evacuated. The interior of the cyst cavity was examined and found to be smooth, thus ruling out the possibility of a true cyst as stated elsewhere in this paper. A rubber tube drain was inserted through the gastrocolic omentum into the cyst cavity and the wall closed tightly around it. The abdomen was then closed in usual manner. This patient made an uneventful recovery. The drainage tube was left in place for two months and at intervals the cyst cavity was filled with normal saline to determine its capacity. The cavity was completely obliterated and sinus tract healed at the end of two and one-half months.

The second case was seen first as an ambulatory case. At that time she was complaining of weakness and mass in the left upper abdomen. She had been in bad health for nine years and during that time had been treated for various ailments including anemia, stomach ulcers, etc. Two months prior to admission she was seen by Dr. Alton Ochsner at one of our institutes and diagnosed as Banti's disease. Spleenectomy was advised at that time and x-ray therapy on the spleen had been given preparatory to this procedure. The mass in her abdomen at time of admission filled the left upper quadrant of her abdomen and extended to a point just below the level of the umbilicus. It was regular in outline and was not very tender to touch. A laparotomy was performed anticipating removal of the spleen. Upon entering the abdomen an extremely large cyst encountered displacing stomach and transverse colon forward and upward. The cyst was opened through the meso colon, evacuated and marsupialized to the abdominal wound. Patient had an uneventful post-operative convalesence until the tenth post-operative day. At that time sodium morrhuate solution, 5%, was instilled into the cyst cavity. Following this procedure patient went into shock and almost succumbed. She was desperately ill for about one week, having rigors, high fever and rapid pulse. After surviving this episode her convalesence was smooth and uneventful. The drainage tube was removed at the end of the fourth week and wound closed spontaneously.

The third case in this series was similar to the two just reported except that the cyst was much smaller and presented above the lesser curvature of the stomach producing a stomach defect that simulated malignancy. He was also operated upon and made a recovery.

The fourth case was in a young girl and definitely followed trauma a few weeks prior to her operation. She was also operated upon and injected with sodium morrhuate solution and made a recovery.

I hope that the scattering remarks I have made will enable some one to be on his guard and make a better diagnostic score than I have in this truly rare condition.

> "It is the moral duty of all the professions allied with medicine to support it in its fight to prevent the encroachment of government into its prerogatives. Medicine is the bulwark and the base upon which the sister professions of dentistry, pharmacy and nursing depend. If it loses its battle then we shall be forced to capitulate and a brilliant chapter in the history of mankind will be nearing its end."

Report of a Case of Adenocarcinoma of the Left Breast

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Hattiesburg, Miss.

Mrs. G. M., white, age 57, first came to my office on September 1, 1949, complaining of pain and soreness in her left breast. She stated that she first noticed a little dent in the skin on the outer side of her left breast next to her ribs about three months before. At the same time she noticed an enlargement or tumor in the region of this dent. There had been a slight aching pain in the region of the tumor for about two months. The pain was of an aching pulling character. There was no pain down the left arm. She went to a nearby clinic on August 26, 1949, where the doctor found a tumor of the left breast and advised immediate radical mastectomy. At that time her chief complaint was pain in the gall bladder region. Also, she told them that she thought she had a knot in her left breast. She was admitted to the South Mississippi Infirmary on September 5, 1949, for left radical mastectomy.

Past History: She had had the usual childhood diseases without complications. Menstruation began at the age of 16 years and was always normal until it ceased at the age of 54 years. She is the mother of 1 child. age 24. Normal pregnancy and parturition. She has hemorrhoids, moderate and chronic indigestion with pain and soreness over the gallbladder for several years.

Family History: Mother died of heart trouble and her father died of unknown cause. Two brothers died of unknown causes. She has four living brothers and four living sisters. There is no history of cancer in her family.

Physical Examination: Temperature, 98.6; pulse. 75; respiration, 18. Blood pressure, 140 systolic and 90 diastolic. Patient is rather obese, weighing 155 pounds. No evidence of weight loss. Skin was of dark complexion. but appeared rather pale. Facies, normal, undisturbed.

Head and neck—Normal

Eyes, Ears, Nose and Throat—Normal. Presbyopia. All extracted. Wears plates. Tonsils present and normal. No thyroid enlargement and no lymphadenopathy in the neck.

Chest—Normal development and expansion.

Physical Examination:

Heart—Normal size, rate and rhythm. No murmurs. Apex beat normal location and character.

Lungs—Normal breath sounds throughout. No dullness or disturbed fremitus. No rales. No lagging. Breasts rather large. There was retraction of the skin of the left breast at the outer border. There was a tumor of the left breast underneath the retracted skin about the size of a lemon which was not circumscribed. It was quite hard in consistency. The left nipple was retracted and pulled up and to the left. No palpable lymph glands or secondary tumors in the left axilla. The right breast was normal.

Abdomen—Normal size and contour. No scars or striae. Slight tenderness in the right hypochondriac region. No tumors or enlarged organs.

Genito-urinary system—Normal. parous.

Rectal examination—Negative except for moderate external and internal hemorrhoids.

Extremities—Normal.

Laboratory Findings:

September 1, 1949: Hemoglobin—75%; Erythocytes—4,500,000; Leucocytes—6,800; Small lymphocytes—33%; Large lymphocytes—7%; Neutrophiles—59%.

Urine analysis—Normal.

Blood type—A—RH Positive.

September 7, 1949: Hemoglobin—60%; Erythrocytes—3,390,000.

X-ray Findings:

X-ray chest—Negative. (September 3. 1949).

Pre-operative diagnosis: Carcinoma of the left breast.

Operative record: On September 6, 1949, at 10:45 a.m. under pentothal sodium anesthesia, a radical left mastectomy was performed as follows: A Willy Meyer skin incision was made through the skin proper surrounding the tumor and nipple. The skin was dissected up on all sides leaving a very thin skin flap. The pectorales major and minor muscles were divided at their insertions and the stumps were ligated with No. 1 chromic catgut. The axillary fat and glands were removed systematically en masse beginning the dissection where the axillary vein emerged from the chest wall and continuing distally. The axillary fat, pectoral muscles, breast and tumor were retracted downward and medially as the dissection was continued in the same direction. Care was exercised in dissecting fat back to the subscapularis and latissimus dorsi muscles because the tumor was located in the outer portion of the breast. The dissection was carried on down and the mass finally removed with a portion of the anterior sheath of the rectus muscle. All bleeding points were ligated and a round rubber tube drain was brought out through a stab wound in the posterior axillary line. Skin was closed with interrupted sutures of dermis. Condition of the patient during anesthesia was fair. There was some shock near the end of the operation due to hemorrhage. An infusion and caffeine, gr. 7½, were given during the operation. Immediate post-operative condition, fair.

Gross findings: A hard non-circumscribed tumor was found beneath the skin and attached to it at the outer border of the left breast about 3 inches long and 2 inches wide. It was also attached by fibrous strands or trabeculae to the areola underneath the nipple pulling it up and out. No visible gross attachments to the underlying fascia. No grossly enlarged glands found in the axilla or between or under the pectoral muscles. The feel of the tumor was that of a scirrhous type carcinoma.

Microscopic findings: Glandular cell carcinoma, grade III. Hyperplastic lymphadenitis; no evidence of metastasis.

Final diagnosis: Adenocarcinoma, grade III of the left breast.

Progress: The patient was admitted to the South Mississippi Infirmary on September 5. 1949, for radical left mastectomy. General condition was good. Operation performed on September 6. 1949, with the assistance of Dr. H. G. Fridge. There was considerable loss of blood and the patient was in mild shock at the end of the operation. The patient reacted quickly from the anesthetic and was very restless. dyspneic. pale and complained of pain in the operative wound. She was placed in Trendelenberg position. infusion continued and morphine given. Patient recovered from shock. Transfusion begun at 3:00 p.m. Wound dressed so as to allow motion of the arm from the beginning and the patient encouraged

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*Read before the Medical Staff meeting of the South Mississippi Infirmary, Hattiesburg, Mississippi, on December 1, 1949.

to move the arm. On the day following the operation, the patient's condition was good. Pulse, respiration and blood pressure were normal. The patient had no fever following the operation at any time. She complained of nausea, indigestion and burning in the 'stomach." Hemaglobin—60%; Erythrocytes—3,390,000. A second transfusion was given on September 8, 1949, the third postoperative day. Infusions, 2,000 cc. daily were given for 3 days. Penicillin, 100,000 units, intramuscularly, given for 4 days. Soft diet allowed on the day following and light thereafter. The drainage tube was shortened on the third day and removed on the seventh day. Skin sutures were removed on the fifth day. The patient stood up on the third day and allowed to go home on the seventh day.

Follow-up notes: After leaving the Infirmary, the patient came to my office three times a week for dressings. She developed a small skin slough in the middle of the scar about the size of a fifty-cent coin and a smaller one at the axillary fold. Both areas healed without skin grafts. Beginning three weeks after operation, the patient was given a series of roentgen treatments. A total of 2,000 roentgen units was given to the supraclavicular and axillary areas and 1,701 roentgen units to the anterior breast site. There was very little skin reaction to the roentgen therapy. The patient is now doing her house work and the wound has completely healed. She has almost full range of motion of the left arm and no edema.

COMMENT: This cause is significant because she knew that she had a breast tumor for three months before consulting a physician. And then it was found on complete examination at the request of her family. In spite of the fact that three months lapsed between the time she first discovered the tumor and the time it was removed, apparently proper treatment was instituted early enough to effect a cure, but more time is necessary to determine this fact.

DISCUSSION: Carl W. Eberbach reported a group of 288 cases of cancer of the breast in which there were 282 radical mastectomies with 1 operative death in a patient with Addison's disease. Routine postoperative irradiation was instituted in all cases. The five-year survival rate was 33 per cent in patients with axillary metastases and 82 per cent in those without axillary metastases. He stresses the careful removal of all regional lymph nodes as the most important single factor in determining the ultimate outcome of the patient. Also he does a wide undermining of the skin as suggested by Handley. He states that the size of the tumor at the time of the operation is far more significant than the duration of the lesion before operation on the survival rate. In accordance with others he performs radical mastectomies in some cases whose prognosis is regarded as hopeless as it is impossible to determine the extent of metastases without microscopic examination what the outcome will be in most cases. Hormone therapy seems to offer some hope for an increase in the survival rate and palliation. There is increasing interest in preoperative irradiation. In its favor are the observations that from 17 to 23 per cent of tumors of the breast will disappear with x-ray therapy alone and axillary nodes may be sterilized in 8 per cent of cases. Superclavicular nodes will disappear in 50 per cent of cases. Ninety per cent of axillary metastases are Grades III and IV which are most susceptible to irradiation. On the other hand preoperative radiation has not been widely accepted because it delays surgical excision and adds to the difficulty of the operation and many observers have not been able to demonstrate any advantage in it. X-ray castration has been used, but without much benefit.

Cogswell has recently reported a case of hidden carcinoma of the breast in which the physical examination of the breast did not reveal the condition, and mentioned three cases reported by Jackson. In each case the patient's complaint was the presence of an enlarged axillary lymph node which proved to be metastatic carcinoma on pathological examination, and was later followed by radical mastectomy. This emphasizes the importance of a thorough palpation of the axillas in examinations of women.

Early diagnosis still holds a place of great importance in effecting a cure.

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The devotion of thought to a worthy achievement will make the achievement possible.

The Physician and the Outdoor Life*

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Louise, Miss.

FEELING that a paper of a scientific nature would be an over ambitious undertaking before this group, I am choosing a digression less exacting but withal taken from personal experiences through the years spent in a country practice in the Delta.

Touching on the unpleasant side, I shall first recount one event out of many taking place in my life and then turn to more pleasant trysts with nature and the outdoors.

Only those who have passed through the early days in the Delta can appreciate the rigors of a night spent in the wilds of the forest, miles away from a sign of civilization. In the winter of 1901, just beginning to establish myself in an isolated region as the "plantation doctor," I was called to attend a woman in childbirth. The location was five miles away from the open land where an eccentric old man had carved one acre out of the wilderness. I was instructed to follow an obscure trail through the forest where at its terminus I might find a lonely cabin. Arriving in the early morning, I found a middle-aged woman who had developed labor pains in the night. The house was a hovel. One chair, and on a small square-topped table that tottered threateningly to the touch stood an oil lamp with no chimney. Nearby was a diminutive stove that smoked at every crevice. A whiskered old man of about fifty years wandered about the room muttering indistinguishably. Outside, a winter blast was coming from the north and ice crystals spewed from the damp earth. The woman of about thirty-five years toiled through the day and near the middle of the night with some dilatation, developed uterine inertia. This was before the days of pituitrin. As night drew on, I suggested to the old man that I had been without food since early morning. He had no coffee but could prepare a portion of a wild boar killed the previous day. There was no other food in the house and so a slab of this questionable meat was placed in a vessel on the smoking stove. The aroma that filled the room was stifling. This I could not overcome and continued on a fast. At the break of day, I sent the man five miles through the woods to my office with a note for forceps. About eleven that morning, while the expectant father made intermittent applications of chloroform, a delivery was made.

It is my opinion that members of the medical profession at sometime in their career have longings for the quiet and solitude of the outer world, away from the grind of busy days in the office and the sick room. So to the great outdoors we will go, "Far from the madding crowd's ignoble strife," on the lakes and in the solitary woods where nature places her all encircling arms about us and gives us peace. For many years I have dwelt in the Delta and as a young man in the early days of this section, tired and worn from a busy life in a malaria-infested region, I would slip away for a few hours to the fishing streams in the silent woods although always with some pangs of conscience for neglect of my patients. The little boys and girls would gather about me and with an expectant look, and say, "Did you catch anything yesterday? We missed you from the office." Then with a bit of embarrassment, I would say, "No, I was tired and needed a little rest and did not have long to stay." Years afterward, the same little girls and the same little boys, now reached full maturity, will come to me and say, "Did you catch anything yesterday? We missed you from the office." Again, a bit embarrassed, I would say, "No, I needed a little recreation and went for an outing and did not have much time." Now, after fifty years, the same little girls and boys, now limited in number and well passed the meridian of life, still come by and say, "We missed you from the office yesterday; did you have any luck?" I will proudly say, "Yes, I caught the limit." Then with a benevolent smile they say, "That is all right, go ahead and enjoy it. You only have about four years left."

Not so long ago, an old Negro man and woman came into the office. The old man stated that he had been trying to see this doctor for a week but he was gone "a-fishin'." The old woman replied, "If you wanta see this doctor you will have to come in the morning, cause 'but middle of the evenings when he gets them little rubber boots on, he's gone. An 'nother thing, he sometimes fishes on Sunday." In self defense, I appealed to their religious imagination. "If I should be so fortunate as to reach the Pearly Gates of the New Jerusalem and am greeted by St. Peter who finds that I am from the Delta, he will then turn to the Recording Angel and ask, "What else have you against this man besides coming from the Delta?" The Recording Angel will reply, "Nothing more only he has been known to fish on Sunday." St. Peter will then say, "That's all right, come on in; I have fished a little on Sunday myself." The effect was as anticipated. The old woman replied emphatically, "Ain't that the truth?"

A number of years ago, a lady acquaintance who was inclined to be dogmatic in her statements, warned me against too much time spent in the outdoors. Knowing that she was very fond of bridge and spent a great deal of time in this recreation, the reply was made that when Jesus called his disciples, he did not seek the bridge player but selected the lowly fisherman.

On a certain morning when Peter and the others had toiled all night long on the Sea of Galilee and their nets were empty, they reclined in the boat tired and discouraged. The mists of the early morning were rising above the water and standing on the near shore was a strange figure and as it drew near to the boat called across, "Have you caught anything"? They replied "No, we have toiled all night long and have caught nothing." The stranger replied, "Cast your net on the right side," and as the cast was made, the net filled to overflowing. Peter standing on the bow of the boat and shading his eyes for a better view, rushed across the shallow water and looking into the face of the Stranger, exclaimed, "It is the Lord, it is the Master." Jesus raising his hand to those in the boat called across, "Follow me and I will make you fishers of men."

Looking back over the years before the hand of civilization had scarred our virgin forests and polluted the streams, we would locate our camp on a lake scarcely known to man, and at night sitting about the camp, the flames from the fire would be the sacrifices and the tall oaks pointing sykward, the columns to the temple. At the break of day, the fog would lift from the placid water and float away to be lost in the shadows, and the sun, coming segment at a time over the edge of the east, would set agleam the dew-drenched forest.

Again in late years we ride far away to the hundreds of lakes near the Canadian border, where our camp is almost isolated on one of the beautiful lakes of this region and surrounded by a forest of pine, hemlock and poplar. At evening tide there is no sound to disturb the stillness, only the lashing of the waves against the sandy shore of Island Lake or the weird cry of the loon winging across the water as the shadows fall across the landscape.

Nature is neither moral nor immoral. She is never pestered with a conscience. She never lies awake at night weeping for her sins. The fury of the mob, the schemes of the capitalists, the rottenness of the big cities, the lies of the demagogs, bloody war and its unspeakable human folly were as but light dust in the balance of the cosmos. I could lose myself in the cool deep recesses of the forest and forget them all.

I can still recall, after the lapse of over three score years and ten, the soft evening twilight as it fell at the close of a summer day. I still remember the rich warm fragrance of the fertile soil and the wild flowers. I can still hear the songs and distant melodious calls of the Negro laborers answering each other from plantation to plantation. I can still catch the soft twinkle of the trace-chains as they rode slowly homeward at twilight on the broad backs of the powerful and patient mules that only the Negro can understand. I found here, deep and strong, the notes of peace as eternal as Nature herself. Nature that long ago gave birth to man, her last and most dubious offspring, seems to me often like a mother stilling her restless child. She is always there to soothe his ills, too often self-created. She never quite lets him slip from her all-encircling arms and when his feverish little career is ended she tenderly folds him to her breast in his last long sleep.

Cancer, as a rule, is first detected by the family doctor or dentist, and here is where the important part of cancer control starts.

Leg Ulcers

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IT IS possible that in treating an ulcer of the leg too much attention may be paid to the ulcer and the underlying cause of the ulcer not considered. A short discussion of the treatment of ulcers of the leg from the following aspects is presented.

1. Determine the cause of each ulcer and treat the specific cause if possible.
2. Skin grafting when indicated.

In order to discuss ulcers as to the specific cause a brief classification of ulcers of the leg is presented.

1) Syphilitic Ulcer—This type of ulcer follows the breakdown of a subcutaneous gumma on the leg. It usually has sharply defined edges and has a punched-out appearance. There is usually large granulations at the base with much serous exudate. The blood serological test for syphilis is positive. Treatment for syphilis is indicated.

2) Tuberculous Ulcer—This is a very uncommon cause of ulcer of the leg. The edges of the ulcer are undermined and uneven. The surface of the ulcer is usually covered with grayish necrotic exudate. There will probably be evidence of tuberculosis elsewhere in the body. Rest and streptomycin may be indicated.

3 Malignant Ulcer—This type of ulcer is usually found in older patients. The ulcer does not respond to usual treatment of ulcers. The diagnosis is suspected by exclusion and proved by biopsy. Treatment is by excision or radium.

4) Mycotic Ulcer—This type of ulcer is probably more common than is generally supposed. There are three types, actinomycotic, blastomycotic and sporotricotic. These may be properly diagnosed by examining the exudate or scrapings from the ulcer and finding the specific fungus. Aureomycin seems promising in the treatment of actinomycotic and possibly in the other two types. Other treatments that have been used are large doses of iodides and x-ray.

5) Sickle Cell Anemia Ulcer—These are simple inflammatory ulcers and usually respond to rest and a mild ointment.

6) Traumatic Ulcer—An ulceration that has developed as a result of an infected wound to the leg or an evulsion of tissue. Penicillin, rest and elevation early may clear up the ulcer. If large area is involved, skin grafting is indicated.

7) Diabetic Ulcer—An ulceration that follows trauma to the leg in a patient with uncontrolled diabetes. Treatment of the diabetes indicated and rest and saline application to the ulcer.

8) Varicose Ulcer—This type of ulcer constitutes 90 per cent of all ulcers of the leg. Varicose ulcers are of all sizes, shapes and conditions. Their appearance depends upon the age of the ulcer and the type and amount of local treatment it has received. The edges are usually sloping and the base is covered with large, coarse granulations. There is usually an area of inflammation around the ulcer which is tender and discolored. This ulcer is usually located on the medial aspect of the lower third of the leg and there is evidence of varicosity of the saphenous venous system. The treatment of varicose ulcers is essentially the treatment of varicose veins. There are several acceptable methods of treating varicose veins. The method that has served best in my experience is the multiple ligation method. This means the ligation of the saphenous vein and all its tributaries at the fossa ovalis. It is important that the tributaries be ligated or collateral circulation may be established. The vein is ligated below where there is an incompetent communicating vein. The short saphenous is ligated at the popliteal space if the short saphenous is involved. For a small acute ulcer this is probably all that is necessary to cause the ulcer to heal.

In large chronic ulcers where there has been loss of subcutaneous tissue and much scar formation the ulcer itself will need some attention following the vein ligation. Dr. Neal Owens of New Orleans has treated a number of ulcers of this type by excision and skin grafting. The results have been very satisfactory and the incidence of recurrence has been reduced. The ulcer is excised well outside its edges and all scar tissue removed down through the deep fascia. Over this area is placed a half thickness skin graft which is covered with a pressure dressing. The graft is placed immediately after excision. There is no waiting period for formation of granulation tissue. This provides a healed area that can withstand a moderate amount of trauma and returns the patient to full activity in a much shorter period of time than with any other method of treatment.

Reactions From Blood Transfusions*

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Reactions from transfusions fall into four groups:

I. Pyrogenic
II. Allergic
III. Circulatory overloading
IV. Hemolytic

I. The pyrogenic reaction is characterized by fever and chills, lasting a comparatively short time. Its cause is contamination by bacterial products. The best treatment is prevention. In case of a severe chill and hyperpyrexia, aspirin and morphine should be given. Calcium gluconate (10 cc. of a 10% solution) given intravenously will abort the chill. This pyrogenic phenomenn is usually not serious.

II. The allergic reactions are associated with urticaria, asthma, edema or anaphylaxis. Strangely, patients who exhibit these manifestations rarely give a history of allergy. The discomforts are soon gone and are rarely ever serious. Adrenalin is the drug of choice. One of the antihistamine preparations should be given orally. Precautions the physician may take to prevent this sort of reaction include taking a careful allergy history of donor and recipient, giving antihistamines before transfusing, and requiring donors to fast before being bled.

II. The third group of reactions is fortunately rare, but does sometimes occur. It is a result of overloading the heart and blood vessels with fluid. There is a left-sided dilatation of the heart with resultant pulmonary edema. This gives rise to classical cardiac failure. The patient becomes cyanotic, dyspneic, and restless. There is increased venous pressure and venous engorgement, moist rales in the lungs, and occasionally peripheral edema. This condition must be recognized immediately. The patient may die within a few moments if adequate measures are not taken. A bedside diagnosis must be made. The physician then applies tourniquets to the four extremities, thus pooling blood in these areas. If this gives relief of any degree, a phlebotomy should be performed immediately. Drugs will not relieve this reaction.

IV. The fourth kind of reaction is hemolytic. The intricate processes that occur in this phenomenon are not completely understood, though more investigation has been done in this field than in the others.

Essentially, some element or elements from hemolyzed blood cells are toxic to the body, when they occur in the recipient's blood stream in sufficient quantities. It is when blood samples are not correctly typed and crossmatched that such reactions may occur. The mortality in this group is 50 per cent. It is generally believed that this toxic substance is free hemoglobin, released from ruptured erythrocytes.

It is to the prevention and treatment of hemolytic reactions that this paper is devoted.

Causes of hemolysis other than giving incompatible blood must be considered. If blood has been frozen, the cells are hemolysed. Overheating or not refrigerating will result in hemolysis. Blood must not be mixed with hypertonic glucose, or with Ringer's solution.

The clinical syndrome of a hemolytic reaction must be understood. There is severe pain in the precardium, the loins and down the legs. The face is flushed; there are chills and fever. Soon shock occurs with a fall in blood pressure, a quick, feeble pulse and sweating. This condition closely resembles surgical shock and is the most dangerous phase of the reaction.

If the patient be under general anesthesia, the condition may escape recognition until shock ensues.

The urine will quite soon contain hemoglobin, red cells and albumin. The serum bilirubin rises and sometimes there is clinically evident jaundice. Renal insufficiency soon supervenes and lasts from seven to ten days. Next a period of diuresis occurs, during which the kidney tubules are being repaired.

Treatment of these cases is frequently unsatisfactory and many patients die despite heroic measures.

Decapsulation of the kidneys, continuous peritoneal lavage, irradiation of the kidney regions, spinal anesthesia, procaine hydrochloride given intravenously, lumbar procaine sympathetic block, alkalinization of the urine, blood transfusions and forcing fluids have all been used with varying results.

During the initial stage of pain, chills and fever, morphine and immediate discontinuance of the transfusion are indicated. It does no good to run saline or glucose into the circulation in an attempt to "wash out" the hemolyzed blood.

When the shock syndrome appears, the urine should be alkalinized by giving sodium bicarbonate or sodium citrate by mouth, if tolerated, or by giving Ringer's lactate solution intravenously. The patient's blood is cross-matched against that of a hemologous donor *with great care* and he is given a transfusion as soon as possible. This is a most important and life-saving procedure. It will combat shock like nothing else and it may easily save the patient from death. Hot water bags and the head-down position are useful. Injection of adrenalin has been advocated but its value is doubtful. If the person survives the initial shocked condition, the renal shutdown is of the next importance. The most beneficial procedures are alkalination and hydration. By now the patient is able to take medication by mouth and the most efficacious method is to give sodium bicarbonate tablets at four to six hour intervals. Fluid, orally and by venoclysis is indicated in an attempt to stimulate diuresis and to replace fluid losses. The body has lost considerable amount of water through the lungs, kidneys, skin and bowels. I believe this should be replaced and enough additional fluid given to supply the tissue needs.

Under the grouping of hemolytic reactions comes those caused by incompatibility in the Rh system. There are two commonly used systems of blood typing—the A-B-O system and the Rh system. We must type all blood in both systems. Reactions caused by mistakes in Rh typing are as important and serious as those in the A-B-O system. Rh negative blood is given to Rh negative patients and Rh positive blood to Rh positive patients. This matter assumes additional importance in the transfusing of girls. Should they receive blood of an opposite Rh group, they may suffer no personal harm, yet later give birth to a baby with erythroblastosis.

It is the hemolytic reaction occurring between homologous bloods, after a series of transfusions, that is most often caused by Rh.

It is well to understand thoroughly the grave problems associated with giving a patient a blood transfusion. There are safeguards that are mandatory.

1) Bloods may be mis-typed or mis-grouped by the technician if he does not possess typing sera of high potency. He may test the strength of his sera by titration or he may buy from a reputable biological house and assure himself of prompt delivery and adequate storage.

2) All donor blood must be cross-matched with that of the recipient. This applies to the so-called universal donor, except as noted below.

3) Do not use blood stored longer than ten to twelve days. Do not use blood that has been frozen.

4) A transfusion should be given slowly. If a reaction takes place and the patient has received only 50 to 75 cc. of blood, his chances of survival are much better.

5) Blood should be given neither cold nor hot but at body temperature. It should not remain at this temperature longer than five to ten minutes before being given.

6) The donor must be in good health, not anemic, not at either of the two extremes of age. His blood should be tested for malaria and syphilis. Remember, the Wassermann may be negative and the donor still have syphilis. Blood refrigerated for three days will not contain viable spirochetes.

7) Rh negative blood is given to Rh negative persons; Rh positive blood to Rh positive patients. In an obstetrical emergency, group "O," Rh negative blood should be used when there is no time for cross-matching.

8) Universal donor blood, group "O," may be used for any group recipient, if the bloods are cross-matched. In emergencies group "O" blood may be used without cross-matching. Recently, commercial preparations of A and B substances have become available for use. It is advised that these be added to the group "O" blood, if cross-matching cannot be done. Their addition will not necessarily protect the recipient against bloods containing agglutinins of high titre.

CASE REPORTS

Case I Mrs. S. — Rh positive, white, age 29.

This patient had a conization of the cervix for severe cervicitis, August 12, 1949. She had no complications and was discharged from the hospital two days later, August 14. On August 24, 12 days after operation, she was re-admitted with moderate bleeding from the cervix. This was controlled by packs. She was again discharged on the 27th, only to return that same night in shock. She was bleeding freely from an artery on the right side of the cervical crater. This was controlled with the electro-coagulation unit and the crater packed tightly. 500 cc. of homologous, cross-matched blood was given within two hours. After forty-five minutes, the patient complained of chills and a "pressure of the chest." The blood was immediately discontinued but she had received 250 cc. Her blood pressure reading was 50/0; the pulse unobtainable; the skin very pale but warm; the temperature was 103 degrees; the urine contained blood. A diagnosis of hemolytic reaction was established. She was given glucose in saline intravenously and soda bicarbonate by mouth. Her blood urea rose to 143 mg. per 100 cc. She remained in shock for forty-eight hours after which she rapidly recovered. On September 5, she felt well, all laboratory tests were normal and she was again discharged. She was seen February 11, 1950, and apparently had suffered no lasting effects.

This case illustrates a severe hemolytic reaction. The patient had chills and hyperpyrexia, hemglobinuria, increased NPN and was in shock for nearly two days. She was not given blood as a therapeutic measure.

Case II Mr. W. — Rh positive, white, age 64.

This man of 64 suffered severe third degree burns over nearly one-half of the skin area. Mr. W. possessed an exceedingly strong constitution. He waited until the day after the accident, then walked into the hospital up to the third floor and presented himself for treatment. With the aid of morphone, gr. ¼, he stood for forty-five minutes while his wounds were debrided and dressed and made no complaint.

His treatment involved continuous tub baths, several skin grafting procedures and several blood transfusions. After a month's hospitalization and four transfusions of blood, he was given a fifth. Within fifteen minutes he experienced a chill, high fever, dyspnea, and pain in the upper abdomen. The blood pressure dropped to 50/10; the pulse was weak and thready. He developed protracted diarrhea and vomiting and nearly died. Within two hours the urine was reddish brown and contained hemoglobin. It was generally agreed that the man would not live; however, his blood was cross-matched against that of a homologous donor and 500 cc. of this blood given the evening of the catastrophe. His pressure immediately rose to 80/60, the pulse became stronger, the vomiting and diarrhea lessened. The following day he received a second transfusion and by that evening was much improved. During these two days his urinary output was 60 cc. By the third day his pulse, blood pressure and temperature were normal. His urinary output gradually increased. He had been delirious and his bladder and colon incontinent. These conditions lasted eight days. For another two weeks, he showed marked diuresis, during which time he received as much as 6000 cc. of fluid intravenously in 24 hours. Within a month from the transfusion reaction he was walking and a few days later underwent a major skin-grafting operation. During his subsequent stay at the hospital—some four months—his urinalyses, blood urea, blood pressure, and kidney function tests showed no abnormalities.

The patient would have died had he not received blood following the transfusion reaction. He received several transfusions in later months with no untoward results.

These two transfusion accidents occurred on the same day. The grouping and cross-matching, both in the A-B-O and the Rh systems, were done on the day of transfusion by a supposedly competent technician. On investigation, however, it was found that on the day of her contribution, she was suffering from an attack of cholelithiasis, somewhat softened by morphia.

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NEW MASSENGILL PHARMACEUTICAL

Three new products have been recently added to the line of S. E. Massengill pharmaceutical preparations.

Obedrin Tablets fulfill the requirements of modern treatment of obesity. The product contains semoxydrine hydrochloride (Massengill brand of methamphetamine) with a corrective dose of pentobarbital sodium, a short acting barbiturate. The amounts of B-complex vitamins present in obedrin is so calculated, that with an average dose of 2 tablets a day, a sufficient amount of vitamins will be supplied for daily requirements, even with a restricted diet; yet the amount is kept within balance so as not to stimulate appetite.

Syrup lumbricide is a powerful vermifuge for roundworms. The laxative ingredients in syrup lumbricide are usually sufficient for treatment, but may be supplemented by a saline laxative an hour after the last daily dose.

Tablets khelisem (Massengill brand of visammin) is a potent coronary dilator. The product has been found to have a profound effect on coronary arteries, producing a dilatation that has been reported as considerably greater than the dilating activity of aminophylline.

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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Editorials

CANCER

This month we raise funds for the fight against cancer, and at the same time the people are being alerted on the nature of cancer and its devastating inroads on human life. Although heart disease claims more lives annually than cancer, it is not really our biggest medical problem. The fight against heart disease when undertaken with a will, will not be as difficult as that against cancer.

The exact cause of cancer is not yet known. Some think it is inherited, some think infection is the main cause, others lean to irritants as the major cause. All of these are no doubt predisposing causes of cancer. The latest theory seems to be that cancer is caused by a mold and its toxic products, a cancer germ so to speak. All forms of tuberculosis are caused by a germ, the tubercle bacillus. Anyway, every community should be observant to help find the true and undoubted cause of cancer.

Cancer is taking and has taken more human lives than all the wars of all the nations. This year we expect cancer to take 215,000 human lives. It is estimated that 22,000,000 people now living will die of cancer in our nation. Every two and a half minutes cancer takes a human life, each day it takes 575 lives. One person in seven dies of cancer, one in five will have it. One person out of every other family will die this year of cancer. For practical purposes right now it is all important to diagnose cancer early and treat it at once. Surgery, x-ray and radium will save the lives of one third to one half of the cancer victims if applied early enough. So with the means at hand, we may save between fifty and a hundred thousand lives each year if doctors are alerted and the public aroused.

The danger signals should be well known by the laity doctors, and nurses: Any sore that does not heal, a lump or thickening in the breast or elsewhere, unusual bleeding or discharge, any change in a wart or mole, persistent hoarseness or cough, persistent indigestion or difficulty in swallowing, and any change in normal bowel habits. Keep these in mind. Cancer comes likes a thief in the night.

Education is still important and our state is doing quite a good job of it by way of the State Medical Association, the State Board of Health, the Woman's Auxiliary, and Mrs. Elizabeth Wates constantly on the job.

War is safe for human life compared with cancer. It will take an all out effort on the part of all people using time and money to whip this most treacherous enemy of human life.

Wire for your room reservation and make your plans to attend the state meeting May 15-17, at the Buena Vista Hotel, Biloxi. The doctors of the Coast are most cordial and the climate is very delightful. Enjoy the sea breezes, the songs of the birds, and a good scientific program. The entertainment will be good and there will be business of importance.

The membership in our state association must be kept up. Funds for carrying on are important, but membership is perhaps of more value. Let us keep our state in the front in every way to promote good medicine. Don't pass up your state meeting.

In the death of Dr. B. S. Waller of Silver Creek, our state medical fraternity lost one of our finest and best balanced general practitioners, his community lost a Christian citizen of the highest value, and the state lost a friend to every good cause. Dr. Waller knew well the art of living. He served his people at 81 up to the very day of his gonig. He was a safe doctor, a friend and a safe adviser to his people. They loved him and they trusted him. He led them in the right way. He was a fine member of the Fifty-Year Club—fifty years in medical service to his people and always true to the trust committed to him.

Dr. Waller left a fine son to carry on in the profession. We feel keenly the loss of a delightful and trusted friend.

News and Comment

DR. CROOK CELEBRATES MILESTONE

Dr. Jere Crook of Jackson, Tennessee, celebrated his seventy-seventh birthday at his spacious home on March 10. It was good to be there. It was easy to see that the people of his town appreciate him as a doctor and as a citizen. He was glad to have his many friends and especially his long-time friend in the profession, the beloved Dr. Seale Harris of Birmingham. Dr. Jere is going mighty strong at 77 and we hope he reaches his full century.

He has been popular in medical circles, has served as president of the Tennessee Association, the Mid-South, the Southern and the American Railway Surgeons associations.

COAST INVITES US

Dr. B. B. O'Mara extends the following invitation:

The members of the Coast Counties Medical Society are looking forward with pleasure to our coming meeting of the State Medical Association in Biloxi, May 15, 16, 17. We extend a most hearty invitation to all the doctors in the state to be present. Doctor B. S. Guyton and the chairman of the various sections have arranged a scientific program well worth the time and effort to attend. We will be honored by the presence of Doctor Elmer Henderson, president of the A. M. A. There will be a golf tournament and skeet shoot for those members who care to participate. Fishing will be good. We urge every one to attend the banquet on Wednesday night, one of America's most outstanding after-dinner speakers has been secured, excellent entrance prizes for the doctors and their wives will be given away. There will also be entertainment of the highest order. Make your plans to be present. 2t

COURSE IN PEDIATRICS

A postgraduate pediatric course will be given at the University of Arkansas School of Medicine, Little Rock, Arkansas, by the Pediatric Department May 14 and 15, 1951. This is a course mainly for practitioners.

Dr. Myron E. Wegman, of Louisiana State University Medical School, New Orleans, Louisiana; and Dr. Gilbert B. Forbes, of Southwestern Medical School, Dallas, Texas, will be the guest speakers.

No fee will be charged for this course.

All interested physicians, nurses and public health workers are invited to attend.

WILKINSON-AMITE COUNTIES MEDICAL SOCIETY

Members of the Wilkinson-Amite Counties Medical Society assembled at the Field Memorial Community Hospital, Centreville, Mississippi, for their regular meeting Thursday evening, March 15. A good attendance of members and their wives was noted. Dr. and Mrs. Paul Jackson, Clinton, Louisiana, were honored guests. Dr. Jackson had an outstanding part in the program.

Following a delicious dinner served by Miss Boles and her efficient staff the meeting was called to order by Dr. D. H. Thornhill and the minutes of the last meeting read by Dr. S. E. Field, secretary of Wilkinson Society.

An interesting program was presented by Drs. C. E. Catchings, R. J. Field, Paul Jackson and D. H. Thornhill who discussed the high points of interest at the recent meeting of the New Orleans Graduate Medical Assembly, all members participating in a general discussion following each presentation.

ACCP

The seventeenth annual meeting of the American College of Chest Physicians will be held at the Ambassador Hotel, Atlantic City, New Jersey, June 7 through 10, 1951. An interesting scientific program has been arranged for presentation at the meeting. Dr. Robert E. Schwartz, Hattiesburg, is Governor of the College for Mississippi.

ANNOUNCEMENTS

Dr. Dan C. Gary announces the opening of his offices at 1010 Madison Avenue, Memphis, Tenn. Associated with Dr. H. D. Gray. His practice is limited to roentgenology and radium therapy.

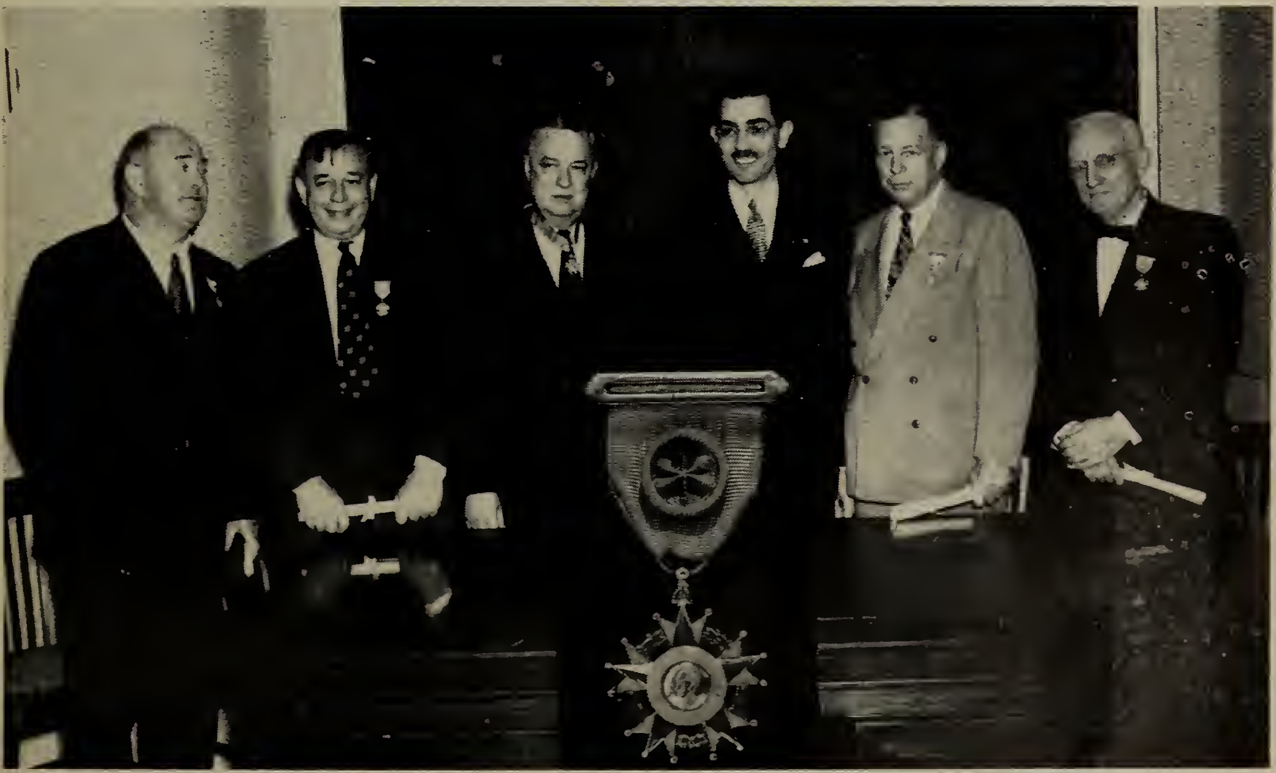
The American Society of X-Ray Technicians will meet at the Benjamin Franklin Hotel in Philadelphia, Pa., on June 3-8.

The Mississippi Society of X-Ray Technicians will gather at the Pinehurst Hotel, Laurel, Mississippi, Saturday, December 3, 1951. All doctors in the state are invited and their presence will be greatly appreciated.

Francis X. Suraci, M.D., announces the opening of his office for the practice of neuropsychiatry, 309 Hatten Building, Gulfport, Mississippi.

The American Cancer Society, Mississippi Division, announces the removal of the state office to 105 South State Street, Crowder Building, Jackson, Mississippi.

Drs. Alston Callahan and Charles P. Grant announce the association of Dr. Joseph M. Dixon at their new offices, 903 South Twenty-first Street, Birmingham, Alabama. The practice of this group is confined to diseases of the eye.



CARLOS J. FINLAY AWARD TO FIVE

In Havana, Cuba, in the late afternoon on Sunday, January 14, the Carlos J. Finlay Award for distinguished service in the field of medicine and public health, the highest honor that can be bestowed in the field of medicine in Cuba, was given to Dr. Elmer L. Henderson, president of the American Medical Association, president of the World Medical Association and past president of the Southern Medical Association, Louisville, Kentucky; Dr. George F. Lull, secretary and general manager of the American Medical Association, Chicago, Illinois; Dr. Tom D. Spies, director, Nutrition Clinic, Hillman Hospital, Birmingham, Alabama, and professor and head of Department of Nutrition and Metabolism, Northwestern University Medical School, Chicago, Illinois; Dr. Paul de Kruif, author and science writer for *The Reader's Digest*, Holland, Michigan; and Mr. Clyde P. Loranz, secretary and general manager, Southern Medical Association.

The formal presentations were made in the Auditorium at the Finlay Institute in the presence of a large number of distinguished Cuban physicians and their wives and friends. Senor Dr. Jose A. Rubio Padilla, Minister of Health of Cuba, a cabinet post, presided and presented the awards individually. In the above picture taken immediately after the awards had been made and the medals pinned on the recipients by Senor Dr. Rubio Padilla, are from left to right: Dr. de Kruif, Dr. Spies, Dr. Henderson, Senor Dr. Rubio Padilla, Dr. Lull and Mr. Loranz. (The picture of the medal is superimposed on the group picture.)

DEATHS

DR. BENJAMIN WALLER

Dr. Benjamin Sylvanus Waller, practicing physician for more than 50 years, died at the Jefferson Davis Hospital at Prentiss March 20. He was 81.

Services were held at the Calvary Baptist Church at Silver Springs, with the Rev. J. T. Tolar officiating. Burial was in the church cemetery.

Dr. Waller, who was one of the 12 charter members of the Mississippi Fifty-Year Doctors' Club, was stricken at 6 Monday evening after he had finished making a number of calls to patients.

Dr. Waller was born in Silver City, Miss., the son of W. M. and Clarinda Longino Waller. His mother was the sister of the late Governor Longino of Mississippi. She celebrated her 101st birthday Feb. 14.

He was educated in the schools at Silver Springs, at Mississippi College at Clinton and at the Kentucky School of Medicine at Louisville. After practicing at the State Hospital for four years, he moved to Silver City and began practicing there in 1904.

He was a Mason, a former president of the Tri-County Medical Society, and a deacon of Calvary Baptist Church.

Dr. Waller leaves his mother; a daughter, Mrs. I. W. McDonald of Meridian; a son, Lieut. John W. Waller in Korea and two sisters, Mrs. Leon Tyrone and Mrs. D. L. Batson of Prentiss.

DR. R. A. HAIL

Burial rites were conducted Feb. 29 in Robertsdale for Dr. R. A. Hail, 84, native of Kemper County, who died at Robertsdale, where he had lived and practiced medicine for more than 25 years.

Dr. Hail leaves his wife, a daughter, Mrs. Tom Hail of Kemper County; three sons, Kenneth Hail, Los Angeles, Calif.; R. A. Hail, Jr., Robertsdale; and Glenn Hail of Mobile, Ala.; a granddaughter, Sarah Alice Hail; and a number of nieces and nephews in Meridian and this county: Mrs. Luther Walker, Mrs. Bob Griffin, L. E. Shumate, Claude and Steve Hall.

DR. E. B. YOUNG

Dr. Edward Brooks Young, age 68, died at Houston Hospital of a heart attack on Tuesday morning, March 13.

Dr. Young was a leading citizen of Calhoun County as well as an outstanding physician. He was born at Ellzey, near Vardaman, the son of Captain Thomas W. Young and Mrs. Martha Blue Young. He received his early education at Vardaman and graduated from the University of Tennessee School of Medicine. He located at Vardaman and practiced his profession throughout his life. He was a member of the Methodist church, a Past-Master of Vardaman Lodge, No. 527, F. and A. M., and a charter member of Thomas W. Young Chapter No. 157, Order of Eastern Star, which was named in honor of his father.

Funeral services were held from the Vardaman Methodist Church, conducted by Rev. R. B. Burks and Rev. E. A. Bailey, Jr., to be followed by interment in the cemetery at Vardaman.

DR. LESTER C. HERRINGTON

Funeral services for Dr. Lester C. Herrington, prominent Terry physician, were conducted March 19 from the Terry Baptist Church by the Rev. Thurman Booth of Iuka, formerly of Terry, assisted by the Rev. John I. Hill, pastor of the Terry church.

Dr. Herrington, who would have been 72 on April 30, died at the Baptist hospital in Jackson following a lingering illness of several months. A native of Copiah County, he was graduated from Mississippi College and the University of Tennessee and had practiced medicine in Hinds County 45 years, first in the Dry Grove community near Terry and later in Terry.

Dr. Herrington was a deacon in the Terry Baptist Church, a member of the Lions Club, and had been active in religious and civic affairs. His medical education was obtained at Memphis Hospital Medical College, Memphis, Tenn.

DR. I. A. CHADWICK

Funeral services were held March 15 for Dr. I. A. Chadwick, Leake County physician, who died of a heart attack, He was 77.

A graduate of the University of the South, Sewanee, Tenn., he was licensed to practice in Mississippi in 1902.

Dr. Chadwick had practiced medicine in Mississippi for 52 years, 50 of them in Carthage. He is survived by his widow, two sons, Dr. Kermit Chadwick of Gulfport and George Chadwick of Carthage and two daughters, Mrs. Frances Peterson of Jackson, and Mrs. Maude Ray of Cleveland, Miss.

BOOK REVIEW

Paul Ehrlich, by Martha Marquardt, published by Henry Schuman, Inc., 20 East 70th Street, New York 21, N. Y. Price $3.50, 255 pp.

Possibly no form of reading is more remunerative to the tired physician who settles for a moment of relaxation than medical biography. The author of *Paul Ehrlich* worked for him thirteen years, and wrote a life of him which was published in 1924 but most copies were destroyed by bombings during the war. This second effort incorporates much that was in the first but greatly widened by details gathered from those who formerly worked with him, his family, and collected publications of Ehrlich's.

Warm and personal, this biography of this great pioneer in chemotherapy, discoverer of the "Magic Bullet" or salvarsan, depicts a whole life given in fighting for the promotion of medical science in the service of mankind. His optimism, his constant aim at perfection, and is unshakable faith in progress left an ineffacable contribution to his science, although his work was prematurely ended by death at the age of sixty-one.

This book is pleasant reading, informative, heartening. One bows in homage to true greatness as the author intimately unfolds his life story.

INTERPRETING MEDICAL LITERATURE

STAFF OF REVIEW
Dermatology—James G. Thompson, Jackson
Otolaryngology—Charles R. Hume
Opthalmology—Edley Jones, Vicksburg
Obstetrics and Gynecology—J. F. Lucas, Greenwood
Orthopedics—Thomas H. Blake, Jackson
Public Health—Felix J. Underwood, Jackson
Pediatrics—Harvey F. Garrison, Jackson
Radiology and Roentgenology—Karl O. Stingily, Meridian
V. A. Pathology—H. N. Naumann, Jackson
Surgery—W. H. Parsons, Vicksburg
Urology—Temple Ainsworth, Jackson

PEDIATRICS

THE EFFECT OF SPECIFIC THERAPY ON THE COMMON CONTAGIOUS DISEASES, Jean V. Cooke, St. Louis, Mo., J. Pediat. 35:275-95, Sept. 1949.

"The effects of specific therapy upon certain of the common contagious diseases were evaluated by analyzing the mortality statistics for these diseases in recent years. The data were obtained from annual reports of vital statistics by the Federal Bureau of the Census. The mortality rate for children alone was considered in some instances because a high percentage of deaths in contagious diseases occurs during childhood. Only diphtheria, scarlet fever and erysipelas, measles, whooping cough and meningococcus meningitis are discussed separately.

"Both the incidence and mortality rate of diphtheria showed marked reductions with and after the advent of specific active immunization. The general mortality fell from over 20 to about 15 per 100,000 with increased use of diphtheria antitoxin. The introduction of toxoid and its increasing use for specific active immunization against diphtheria brought further reductions, the general mortality rate falling to 1 per 100,000 in 1940. The mortality rate for children under 5 years of age fell from 30 per 100,000 in 1930 to about 7 in 1945 and the rate for children under 15 fell from 15 to 3 in the same period. No further decrease has occurred in recent years, however, indicating a need for continued and more extensive active immunization of children.

Sulfonamide therapy has produced a rather sharp and striking reduction in mortality from scarlet fever and other streptococcal infections including erysipelas, the mortality rate of scarlet fever falling from just over 2 per 100,000 in 1937 to 0.3 in 1941. While still clinically prevalent, scarlet fever is no longer dangerous to life in childhood.

The incidence of whooping cough decidedly decreased during 1944 and 1945 and this decrease has continued, apparently as a result of active pertussis immunization. The fact that more than 70% of all deaths from pertussis occur during the first year of life emphasized the need for earlier active immunization. Specific sulfonamide therapy reduced the general mortality from whooping cough, apparently from the effect of the sulfonamides upon the associated bronchopneumonia.

"About one-half of all deaths from measles occur in children under 2 years of age and about two-thirds in those under 5 years. The mortality rate definitely decreased after 1937, probably as a result of the effect of sulfonamide therapy upon the secondary pneumonia. Sufficient data are not yet available to determine the effect of immune globulin and gamma globulin upon measles. Specific sulfonamide therapy has also markedly reduced the general mortality of meningococcus meningitis. Further reductions will probably result from the more frequent use of diagnostic lumbar puncture in poorly defined febrile diseases and the increasing use of penicillin therapy in meningococcus meningitis.

"These statistics show that specific therapy has been definitely beneficial in the treatment of the common contagious diseases of children. Further improvements may be expected from the newer specific treatments, especially antibiotics."

COMMENT: From the standpoint of therapy, this is a very interesting article; however, since it was written there have been quite a number of antibiotics and other types of therapy which have markedly improved the treatment of some of the diseases mentioned in this article. We have about arrived at the conclusion that immunizations should be compulsory. It has been our privilege to see the ravages of whooping cough in young babies to the extent that we are perfectly outraged at any parent who would permit his child to go without the value of immunizations that are known to be effective in preventing diseases. It has been our duty to treat several cases of whooping cough in infants recently, and also to have had the unpleasant duty of seeing some of them with crippling effects that will stay with them through life.

STATE BOARD OF HEALTH

Felix J. Underwood, M.D., Executive Secretary

The Cancer Control Program in Mississippi

In April, when all are reminded through the observance of Cancer Control Month that this disease continues to be one of the greatest threats to life and health, it seems timely to reflect upon its status in our own state and what is being done about it.

In 1949 there were 2,039 deaths recorded in Mississippi as due to cancer. Provisional figures for the first eight months of 1950 show a total of 1,527 deaths attributable to this disease. Every physician's office today can help reduce this heavy mortality by being a cancer detection center, for 60 to 75 per cent of the cases of cancer could be cured if they could be discovered early enough. Only in the past 75 years has the physician been able to offer effective therapy as well as to diagnose cancer. This is a significant advance. Additional progress will be realized when the knowledge and tools now available are put to work. Excellent publications, including those in vivid pictorial detail, are made easily accessible to the physician to help him recognize possible early signs of cancer. Additional books and references he may wish to consult are made available on an extension loan basis to any point in the state from the medical library of the State Board of Health. Seminars have been arranged from time to time. The Cancer Control Division of the State Board of Health, cooperating with the State Medical Association's professional educational subcommittee of its Cancer Committee, and the Mississippi Division of the American Cancer Society recently sponsored seminars in three areas of the state, which were well attended by the physicians of those areas. The seminars were conducted by teaching staffs from Tulane and Louisiana State University schools of medicine.

One of the outstanding organizations of the country which has done so much to awaken public interest in seeking early diagnosis is the American Cancer Society, founded in 1913. This humanitarian agency for many years has worked with and through the medical profession in laying the foundation for a continuing campaign for cancer control. In 1935 the Women's Field Army was begun, launching its educational and enlistment campaign under the slogan, "Early Cancer Is Curable; Fight it With Knowledge." This great army of interested women volunteers did an effective job throughout the country and set the stage for much of the present educational program.

Dr. Emma Gay of Biloxi was named State Commander of the Women's Field Army in Mississippi in October, 1936. The next year witnessed some real interest in the state, as the State Executive Committee for the Control of Cancer called on the Governor for a proclamation designating the month of April as "Cancer Month." In 1938, Congress authorized the President to proclaim this month each year as National Cancer Control Month. The National Cancer Institute, designed to increase knowledge of the disease through laboratory and clinical research with universal eradication of cancer as the ultimate goal, was also set into action by the Federal government in 1937.

The State Executive Committee was reorganized and strengthened in December, 1939, when a group of interested laymen and physicians met in Jackson to consider the program and its objectives. At that time Dr. Felix J. Underwood was made chairman of the committee. In 1940 the program of the Mississippi Division of the Women's Field Army was endorsed by the State Medical Association and by the State Board of Health.

In 1945, the Division of Cancer Control was set up by the State Board of Health, a subdivision of Preventable Disease Control. At this time a joint program was instituted by the State Board of Health and the American Cancer Society, with the full cooperation and assistance of the State Medical Association.

There is only one cancer control program in Mississippi. The personnel of the office of Cancer Control is employed jointly by the Mississippi Division, American Cancer Society, and the State Board of Health. In each county of the state, a local cancer unit of the American Cancer Society is set up. The local cancer unit consists of a unit chairman, secretary, treasurer, educational chairman, publicity chairman and service chairman, with any additional chairmen that are needed to carry out an adequate service program. These county units work closely with the county health departments. The central office channels materials through the local group.

The program of Cancer Control is supported in Mississippi through three funds: state, federal, and volunteer contributions. The state funds are by Legislative appropriation and through a Legislative act allowing hospitalization of cancer cases to be paid for from the State Charity funds. Federal funds are, of course, by direct allotment to the state by the Federal government and are channeled through the State Board of Health. The volunteer contributions are raised by a Campaign for Funds conducted each April. This serves the double purpose of directing the attention of people to cancer and the necessity for cancer control as well as to secure needed funds. These contributions are divided as follows:

Twenty per cent is returned to the county for use at the local level, for treatment of terminal patients, additional educational materials and any expense the county wishes to assume. Thirty per cent is used as Service Program that is the hospitalization and treatment of cancer patients who offer hope of cure. This thirty per cent is matched by the Federal and Legislative appropriation. Ten per cent is for state administration, clerical assistance, etc. Forty per cent goes into the National Office of the American Cancer Society. (Twenty-five per cent of this amount is spent for research.)

REPORT — SERVICE PROGRAM, AMERICAN CANCER SOCIETY MISSISSIPPI DIVISION — JULY 1, 1950 — JANUARY 1, 1951

806 Applications received in office
643 Approved for treatment
153 Applications refused because of age, state of disease or failure to complete the application.

SEX and COLOR
137 White Males
221 White Females
202 Colored Females
81 Colored Males
2 Choctaw Indian Males

643 Approved

SITE OF DISEASE

127 Skin
5 Uterus
157 Cervix
4 Hodgkins
2 Liver
3 Gums
3 Tongue
33 Stomach
75 Breast
19 Lip
2 Caecum

9 Mouth
6 Parotid
8 Ovary
1 Pharynx
2 Sigmoid
7 G. I. Tract
20 Colon
9 Prostate
9 Rectum
21 Lung
8 Jaw

7 Throat
Bladder
2 Hip
2 Scalp
7 Bone
1 Mediastinum
4 Thyroid Gland
7 Abdomen
3 Testes
1 Sinus
4 Leukemia

13 Cervical Gland
2 Wilm's Tumor
9 Brain
2 Papillary Cyst
4 Vagina
1 Vulva
4 Penis
2 Chest Wall
2 Kidney
2 Tonsil
3 Eye

COUNTY

3 Adams
6 Alcorn
2 Amite
12 Attala
27 Bolivar
9 Calhoun
5 Carroll
2 Chickasaw
3 Choctaw

4 Claiborne
3 Clarke
6 Clay
23 Coahoma
5 Copiah
12 Covington
8 Desoto
18 Forrest
4 Franklin

2 George
1 Greene
3 Grenada
4 Hancock
6 Harrison
43 Hinds
20 Holmes
8 Humphreys
2 Itawamba

8 Jackson
10 Jasper
1 Jefferson
5 Jeff. Davis
3 Kemper
1 Lafayette
2 Lamar
9 Lauderdale

4	Lawrence
8	Leake
4	Lee
12	Leflore
5	Lincoln
6	Lowndes
13	Madison
6	Marion
6	Marshall
9	Monroe
3	Montgomery
10	Neshoba
5	Newton
3	Noxubee
2	Oktibbeha
4	Panola
1	Pearl River
3	Perry
7	Pike
3	Pontotoc
2	Prentiss
3	Quitman
8	Rankin
3	Scott
6	Sharkey
8	Simpson
11	Smith
3	Stone
23	Sunflower
17	Tallahatchie
10	Tate
3	Tishomingo
4	Tunica
4	Union
13	Warren
35	Washington
6	Wayne
12	Webster
2	Wilkinson
10	Winston
5	Yalobusha
9	Yazoo

Woman's Auxiliary

STATE MEETING BULLETIN!

Members are urged to make their plans for at least two days, May 15 and 16, on the Gulf Coast for the state meeting. A full program has been arranged, with honor guests from the Auxiliary to the American Medical Association and the Southern Medical Association, luncheons both days, and the usual entertainment features provided by the Gulf Coast hosts. You can't afford to miss.

See you at the Buena Vista, Biloxi, Mississippi, May 15 and 16!

AMA BULLETIN

A few more months, and the members of the Woman's Auxiliary to the American Medical Association will be arriving in Atlantic City, New Jersey, for their Annual Convention June 11-14.

Have you made your reservations? If not, send your request *at once* to Dr. Robert A. Bradley, Chairman A.M.A. Housing Bureau, 16 Central Pier, Atlantic City, New Jersey.

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The Treatment of Uterine Prolapse*

ROBERT A. KIMBROUGH, M.D.
Philadelphia, Pa.

IN THE writings attributed to Hippocrates in the fourth century B. C. is an excellent description of complete uterine prolapsus, in which he advises washing the parts with black wine, manual reposition, and seven days' rest in bed with the feet elevated. No mention is made, however, of the end results of this procedure.

Soranus, of Ephesus, of the second century A. D., is our leading authority on the obstetrics and gynecology of the ancients. Even in that day, perineal bandages and pessaries were looked upon as time-honored methods of treatment. Soranus chides Euphyron for suspending his patients by the feet to a ladder for a period of 24 hours, and scores those who believed that the prolapsed uterus would retreat to its natural position if exposed to evil-smelling medicaments. He advocated manual replacement, binding the legs together, and, after several days' rest, use of a pessary of wood dipped in myrrh.

Little if any progress was made in the treatment of uterine prolapse during the Middle Ages, or in the Renaissance, for we find that during this time Rodericus a Castro attacked the procidentia with a red hot iron to cause it to retreat into the vagina, while others bound lizards and mice to the uterus to frighten it into normal position. Paré advised the use of a pessary consisting of a ball covered with leather, but does not mention surgery for the correction of the condition.

In 1702, Stephen Blancard inferred surgical treatment of prolapse in his definition of "Procidentia Uteri" in The Physical Dictionary:

"A relaxing of the Inner Tunick of the Womb, which falls through the Privates and was cut off by Physicians."

The first suggestion of a rational surgical approach to treatment of prolapsus is attributed to the French surgeon, Romaine Gerardin, who, in 1823, proposed obliteration of the vaginal orifice by suture of the denuded labia. He did not, however, perform the operation. Eight years later (1831) Marshal Hall, of London, proposed a rectangular denudation of the anterior vaginal wall followed by side-to-side suture of the denuded area in a manner that the prolapsed uterus would be supported by the narrowed vagina. Heming followed Hall's suggestion and performed the operation with success in 1931.

Shortly thereafter, Geddings is credited with first combining perineorrhaphy with narrowing of the vaginal walls. Judging from the description of these early operations and from the accompanying illustrations, the operators depended almost entirely upon suture of the mucosa and skin. The deeper supportive structures were not repaired, and, in most instances, the operators depended almost entirely upon suture of the mucosa and skin. The deeper supportive structures were not repaired, and, in most instances, the operation served only to narrow the vaginal orifice, so that a ring pessary could be utilized. Important contributions were made to vaginal plastic surgery by Diffenbach, Velpeau, Marion Sims, Emmet and others during the middle of the nineteenth century. In 1877 Leon LeFort advocated partial occlusion of the vagina by suturing together the denuded anterior and posterior vaginal walls. Almost simultaneously Neugebauer, in Germany, devised much the same operation, which with little modification, is now found useful in a definite but small group of cases.

In 1888, Donald, of Manchester, England, then senior resident surgeon in St. Mary's Hospital, devised the combination of anterior and posterior colporrhaphy with amputation of the cervix, and called particular attention to the necessity of suture of the bases of the broad ligaments anterior to the cervix. This procedure was later modified by Fothergill and more recently by Fletcher Shaw, but with little change, the Manchester operatoin constitutes today the most effective treatment of the majority of cases of uterine prolapse.

In the choice of treatment for uterine prolapse, patients must be individualized by consideration of many pertinent factors. Age, general condition of the patient, degree of prolapse, sexual life, the desire for additional children and other associated pelvic disorders constitute the chief points on which the decision must be based.

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*Delivered before the sixty-second annual session of the Mid-South Postgraduate Medical Assembly, Memphis, Tenn., February 13-16, 1951.

In most instances, surgical repair of the torn or attenuated supportive structures constitutes the procedure of choice. On the other hand, since procidentia occurs more often in elderly women, a considerable number are poor operative risks. For the treatment of this group, some form of mechanical support must be used. Conservative treatment is indicated also in younger women with partial prolapse, who desire to postpone extensive repairs until additional children are borne; similar measures are applicable to the occasional cases of prolapse which occur during pregnancy.

Circular hard rubber pessaries are preferable to the soft or sponge rubber type, as the latter, being rough, readily become encrusted with secretion, are foul in odor, and are more irritating to the vaginal wall. The caliber of the hard rubber pessary should be small as will maintain the uterus and the associated cystocele in proper position. Ring pessaries of the same caliber rubber as the usual Smith pessary accumulates less encrusted mucus and permit better drainage than those made of larger caliber material. The ring pessary should be large enough in diameter to fill the relaxed vagina and rest comfortably against the pubic rami without making undue pressure on the lateral vaginal walls or the urethra. Occasionally, the vaginal orifice is too relaxed to hold a pessary in place; continued use of tampons, however, has the disadvantage of macerating the atrophic vaginal epithelium.

The cup-pessary with its attached stem and harness is rarely justifiable. With this device in place, the entire weight of the uterus rests on the cervix, and decubitus ulceration is almost inevitable. Some few patients, who cannot be subjected to operative repair, and who, for various reasons, cannot be fitted with any mechanical support, find considerable relief from the use of a vulvar pad with a tightly applied perineal binder.

Surgical Treatment

Every gynecologist has his favorite operative methods for correction of uterine prolapse. No one method is suited to all cases, but certain principles are common to all successful operations. The chief cause of prolapse is, unquestionably, over-stretching or tearing of the fibromuscular supportive tissue in the bases of the broad ligaments. Therefore, any procedure which does not include shortening of these structures is doomed to failure. In addition, the almost invariably associated cystocele and rectocele must be repaired, and attention must be given to the frequently associated enterocele.

Manchester Operation

This procedure consists of amputation of the cervix, shortening of the bases of the broad ligaments, and anterior and posterior colporrhaphy. The details of the technic of this operation have been so well presented by Fletcher Shaw, of Manchester, and more recently by Frank, Gordon, and Curtis in this country, that there seems no necessity to do so in this presentation. The order in which this combination of procedures has proved most effective and, in our hands, easiest to perform, is as follows: elevation and suture of the bladder high on the anterior face of the uterus, amputation of the cervix, covering the posterior lip of the cervix with Sturmdorf's stitch, cutting away the excess vaginal mucosa, placing but not tying the broad ligament sutures anterior to the cervix, completion of the cervical covering, closure of the anterior colporrhaphy from the urethral end, and finally tying the sutures previously placed through the bases of the broad ligaments. We have found that tying these chief supportive sutures earlier in the operation often elevates the cervix to such a degree that the remainder of the anterior closure is rendered extremely tedious. Posterior colporrhaphy completes the operation. This is the least radical of all the major surgical measures and is, therefore, best suited to the young woman who desires to have additional children. Shaw found in his follow-up study that labors subsequent to this operation were well tolerated; in only 18.5 per cent was there any recurrence of symptoms. Another advantage is that vaginal depth is more regularly conserved in this procedure than in the more radical measures. The Manchester operation is my choice also for partial prolapse in older women, if there be no special indication for hysterectomy. The shortening of the bases of the broad ligaments may be accomplished with or without detaching them from the sides of the cervix. If the cervical amputation is high, I prefer to detach them and bring them together anterior to the cervix; if the amputation is low, simply overlapping the unsevered ligaments anteriorly serves the same purpose and gives a smoother anterior cervical lip.

The Interposition Operation

This procedure was devised in 1898 almost simultaneously by Thomas Watkins and by Wertheim. It consists of longitudinal incision of the anterior vaginal wall in the plane between the bladder and the vesicovaginal layer of the endopelvic fascia, elevation of the prolapsed bladder beyond the line of the peritoneal reflection, incision of the peritoneum of the anterior cul-de-sac, extraction of the fundus of the uterus through this opening, suture of the top of the fundus to the fascia just under the pubic rami, and closure of the anterior vaginal wall so that the base of the bladder rests on the posterior surface of the uterus. Posterior colporrhaphy completes the operation.

Because of the distorted relations of the uterus and the bladder, childbirth after this procedure is hazardous, if, indeed, it is possible. The operation should, therefore, be utilized only after the menopause or artificial sterilization. Its field of greatest usefulness is in elderly women with cystocele and only partial prolapsus. We do not use this procedure in any case in which the cervix protrudes more than one inch beyond the vaginal orifice. The operation in our hands is poorly adapted to the correction of complete prolapse because the relaxed uterosacral ligaments in these cases fail to maintain posterior traction on the cervix. Unless the cervix is held well back in the pelvis, recurrence of the procidentia not infrequently occurs. Care should be exercised that the fundus be sutured firmly enough under the pubic rami to fill the hernial orifice through which the cystocele pushed its way.

The interposition operation is not used in our clinic in young women who are sexually active, because of the high incidence of postoperative dyspareunia.

Vaginal Hysterectomy

Removal of the uterus is not practiced in our clinic in cases of partial prolapsus unless there be some indication for hysterectomy other than malposition of the uterus. The uterus is the keystone of the upper pelvic arch, and its removal renders shortening of the broad ligaments more difficult. Vaginal hysterectomy is, therefore, rarely utilized electively except in cases of complete prolapse in elderly women.

A brief outline of our procedure is as follows: transverse incision of the vaginal wall just anterior to the vaginal wall just anterior to the cervix; blunt dissection of the bladder from the vaginal wall; longitudinal incision of the anterior vaginal wall from the cervix to a point near the external urinary meatus; elevation of the bladder above the point of peritoneal reflection; completion of circular incision of vaginal mucosa into posterior cul-de-sac; clamping and ligation of both uterosacral ligaments and the lower half of both broad ligaments; severing these ligaments from the uterus; incision of the anterior cul-de-sac with the finger in the peritoneal cavity as a guide; delivery of the fundus through the anterior peritoneal opening; ligation of the upper half of both broad ligaments; excision of the uterus; purse string closure of the peritoneal cavity; uniting the severed broad ligaments in the midline; attaching the vaginal vault to the united uterosacral ligaments; anterior and posterior colporrhaphy.

Attention should be directed to the possibility of an associated enterocele, and, if present, the hernial sac must be obliterated or removed. In performing the anterior colporrhaphy on these patients who are incontinent of urine, two or three mattress sutures are taken in the fascia underlying the internal urinary meatus. These sutures should be firm, but should not unduly constrict the urethra; tight constriction often delays the return of normal sphincteric action and prolongs the necessity of catheterization.

Partial Colpocleisis

Partial closure of the vagina by LeFort's operation is the simplest of all the surgical procedures for the correction of complete prolapse. Since, on completion of the operation, the vagina is practically closed, it is limited in its applicability to those patients whose sexual life is of no importance. It is easily performed under local anesthesia; little, if any shock attends the procedure, postoperative complications are rare, and the final results, in the limited number of patients to whom we have found the operation suited, have been eminently satisfactory.

After excluding, by curettage, the possible presence of fundal malignancy, the first step of the operation is a rectangular denudation of the anterior vaginal wall. The denuded area should not be more than 4 centimeters wide, and should extend from a point just below the cervix almost to the urethral orifice. A similar denudation of the posterior wall is followed by a suture of the edges of these identical rectangles, beginning just below the cervix and proceeding toward the introitus. The sutures are placed in pairs, one on each side, so that, as the operation proceeds, the cervix disappears and the prolapsed uterus gradually returns to its normal level. Firm perineorrhaphy is essential for proper support. On completion of the operation, a narrow channel extends upward from each side of the vaginal orifice and these are continuous with the transverse channel just below the cervix. This channel must be of sufficient caliber to provide adequate drainage of cervical and uterine secretions.

The foregoing constitutes our general ideas of the indications for the various operative procedures for the treatment of prolapsus.

In closing this brief discussion of the treatment of uterine prolapse, I should like to reiterate that no one method can apply to all cases, and that proper choice of treatment for any patient can be made only after evaluation of many factors.

807 Spruce Street

Painful Lesions of the Upper Extremities Treated by Injecting the Stellate Ganglion with Procaine Hydrochloride*

THOMAS J. SAFLEY, M.D.
Jackson, Miss.

THERE are many painful lesions of the upper extremity which respond to stellate ganglion injections. Trauma may be the initiating cause but we will not deal today with those that result from trauma except to say that in those lesions which are the result of trauma in which there is damage to the blood vessels, injection of the stellate ganglion will improve the condition of that extremity. This, of course, is due to the fact that the sympathetic nervous system controls the muscles of the vascular system. Injection of the stellate ganglion would relax any spasm which may result from damage to vessels, hasten the improvement of that extremity and alleviate to a certain extent the pain of that extremity. Some of the consequences of trauma to the upper extremity which may be alleviated by injection of the stellate ganglion are: the cold, almost pulseless extremity, associated with some fractures of the bones of the upper extremity; cases of early Volkmann's ischemia; and so-called Sudeck's atrophy, which occurs from misuse of the hand.

Bursitis is probably the most important one that we see and the bursae which may be involved are: bursa about the shoulder joint, about the elbow joint, and about the wrist. Peritendinitis can be included in this group. The bursa becomes inflamed as a result of the trauma of unusual or prolonged muscular activity. This inflammation causes pain. Later calcium is deposited and it causes pain. The pain causes disuse of the extremity and pericapsulitis develops. A "frozen" joint may result.

I have divided the cases into two groups, based upon the length of time the painful condition has existed. I have placed in the chronic group those who have had pain in the extremities for as long as one month, and in the acute group those who have usually been seen within a day or two of the onset of their disease.

Typical of the chronic group are Mrs. E. B. G. She is an elderly white female who came into the office with the story that since December she had been treated for bursitis and neuritis. She first tried treatment by her home physicians with medicine by mouth, heat, salicylates, and vitamins. She then was sent to a radiologist for the treatment of bursitis. She got a little relief from everything but no definite relief from anything that was done. She was finally referred with definite limitation of motion of the shoulder. When she was first seen she lay on the table complaining that she was unable to lie still because of the pain. She was injected with two per cent metycaine solution and developed immediate complete relief of her pain. She had a much wider range of motion though she lacked considerable having a hundred per cent range of motion in her arm. This woman was injected four times on daily visits and allowed to return to her home with instructions to return three days later. She has failed to return and two weeks following the last injection I contacted her home physician, who told me that while she still complained of pain to a certain extent he felt that she was definitely much better. In fact, on that particular day she was out fishing, something that she had not undertaken in some time, chiefly because of her pain.

Mr. S. represents a rather typical case of acute subdeltoid bursitis. He has a job which requires him to pick up heavy cartons and raise them, sometimes above his head. He noticed one day that his arms got a little bit tired and began to hurt a little bit. Two days later he was unable to raise his right arm beyond a forty-five-degree angle because of the severe pain in his shoulder. X-ray of the shoulder showed definite calcification in the subdeltoid bursa.

Following the first stellate ganglion injection this man was able to raise his hand completely above his head and had the same range of motion in his right arm and shoulder as he had in his left. We injected this man three times and within one week he had been returned to full duty.

Mr. E. D. W. represents a rather unusual case of bursitis. He used his first as a hammer in driving some window dressing boards into position in one of the store windows downtown. This happened on a Thursday and on Monday he showed up in our office with the statement that his hand had begun to hurt him on Saturday. It hurt him so badly that he was unable to use his right wrist. X-ray showed what appeared to be a fracture at the base of the fifth metacarpal. However, we did not think that it definitely was a fracture as we could not see the area from which the fracture had been avulsed so we thought that it was probably a calcification. Dr. Blake backed us up in the belief that it was calcification in a bursa at the wrist. This man responded beautifully to three stellate ganglion injections, using two per cent metycaine, and was able to return to his full job within a week.

De Takets has applied the name "causalgia" to a condition which has been known to exist for many years. The syndrome to which he has attached the name causalgia is one in which there is a painful hand or foot which becomes atrophic, and in which the skin over the member becomes soft, satiny and very tightly drawn. The x-ray appearance of the bones in the hand is that of absorption of calcium. The hand or foot becomes so tender that the patient will allow nobody or thing to touch it. This state comes on usually following a minimal trauma and is closely associated with psychic trauma of some kind. Most of the cases have been seen in soldiers. In the early stages of the causalgic extremity, simple repeated stellate ganglion injections are enough to bring about a reversal of the disease and a permanent cure. Later on it may become necessary to do an ablation of the stellate ganglion in order to cure this patient of the disease.

Mr. J. L. W. is not a typical case of causalgia but represents the condition satisfactorily. This man suffered an injury to his left wrist in August of 1949. He was treated by a local physician, but he was never able to use his left arm for any certain length of time. Finally x-ray showed an area of rarefaction in the bone which was interpreted as osteomyelitis. He was treated for osteomyelitis by curetting the cavity and following this treatment within about ten days we started stellate ganglion injections. Before we started the injections he had a hand which was silky in appearance, shiny, velvety, almost a typical picture of causalgia. He was unable to touch the thumb to the tip of any of his fingers, the left forefinger was definitely ankylosed in about a fifteen degree flexion of each of the three joints. The other fingers were correspondingly stiff. Following daily stellate ganglion injections and encouragement to use his fingers, he was able to bring the fingers down with the exception of the forefinger to where he was able to close the three other fingers to within one inch of the base of the palm. The left forefinger, of course, has fibrous ankylosis. Whereas any motion previously caused pain, none of the motion causes pain at the present time. He still has some swelling in his hand but he is able, I think, to use his hand a great deal better than before.

Of course, we use this treatment in several types of peripheral vascular disease, particularly in Berger's, Raynaud's, and arteriosclerotic disease of the extremity. There are other diseases which are less commonly found including erythromelalgia and frost-bite, which respond well to the treatment of sympathetic injection or removal.

Of course, we use this treatment in several types of peripheral vascular disease, particularly in Berger's, Raynaud's, and arteriosclerotic disease of the extremity. There are other diseases which are less commonly found including erythromelalgia and frost-bite, which respond well to the treatment of sympathetic injection or removal.

Mr. W. F. H. had a peripheral vascular disease which did not present the typical picture of any of the common peripheral vascular diseases. The hand was definitely warm, it was sweating, it was red, there were areas of redness and purplish discoloration in the nail beds and in the pulp of the fingers and thumb. The hand was very tender, so much so in fact that he would withdraw that hand when a person made an attempt to see it. This did not look like the picture in either Berger's disease, Raynaud's disease, or arteriosclerosis. It more closely resembled what one would expect to see in erythromelalgia. This man does have the findings of peripherovascular incompetency or insufficiency in both lower extremities in that his legs get tired when he stands on them a long time, particularly if he walks. About ten years ago he was told at the Henry Ford Hospital in Detroit that he had an insufficiency in his lower extremities. When first seen it was decided that stellate ganglion injections would help this man. Repeated stellate ganglion injections were given and he got a good result. Following each injection he would have complete relief from the burning and tingling in his hands for a period of twenty-four to seventy-two hours. We injected him only when necessary. Because he lived a considerable distance from town, we considered and did inject some nupercaine in oil in the area of the stellate ganglion. This man got a marvelous result from the injection of this oil. However, we injected oil into other patients and have discarded it because two other patients developed a rather terrific edema following the use of the nupercaine in oil, probably due to the presence of the irritating substances in the oil.

The pain in the upper extremity caused by throwing a baseball or any other object which is primarily that of vascular spasm and in its chronic stages of thrombosis can be immediately relieved by the injection of the stellate ganglion.

S. N., a student at Millsaps, was playing softball. After having pitched a ball, he grabbed his right elbow stating that it hurt him terribly. He had much pain over the region of the ulnar nerve at the elbow and in the anterior elbow. He was unable to use his wrist any at all. Supination and abduction of the hand caused pain. This patient was injected and received complete immediate relief. This man was injected within two hours of his injury. He called in the next day to say that he had complete relief of his pain and did not need another injection.

Lastly, the lesion which I would like to direct your attention to is a very common one and until very recently I had not associated with stellate ganglion. This lesion is the one that everybody calls a "crick in the neck." The pathology of this lesion has usually been described as that of a myositis or a fibrosis. It is the type lesion which is usually associated with a trigger point, the injection of which sometimes gives relief. If one can definitely find a trigger point and inject that trigger point, one is able to relieve the patient of the pain fairly regularly. The pain in myositis and fibrositis is usually the result of a spasm of that muscle or group of muscles which are involved in the process. However, we should remember here that some of the cases—what percentage I don't know—of so-called "myositis and fibrositis" are due to degenerative changes in one of the cervical intervertebral discs. Injection of the stellate ganglion obviously in this case will not be a curative procedure. It may relieve the patient of pain for a little while and the fear of the needle or the fear of the injection may make the patient feel as if he is getting better a little bit earlier, particularly if he thinks the doctor will discontinue the injection if he says he is feeling better.

A typical case of the so-called myositis or fibrositis is that of M. J. B., who was first seen in the emergency room with the story that he was unable to turn his head. He had a terrific "crick" in his neck. There was definite spasm and tenderness of the trapezius muscle on the left, he also had spasm of the erector spinae group of muscles in the neck. It was decided that this patient had too widespread distribution of pain for a local injection to do him any good. We injected the stellate ganglion and within two minutes after the withdrawal of the needle the patient was able to turn his head in any direction, raise his shoulder, and he was completely relieved of his pain. He was asked to return on the next day so that we could repeat the injection, but he called in to state that he still had no trouble from his neck and that he would not come in until he had a return of his pain.

Mrs. J. B. represents a second case of this kind. She was lying in bed when first seen and complaining of being unable to get up because of pain in the left side of her neck and in her left shoulder. We decided that this was a case of so-called "crick in the neck" or "crick in the shoulder" and advised stellate ganglion injection. She stated that we could do anything we wanted to just as long as we guaranteed her a little relief of pain. We injected her with the same results we got in the other patient.

The technique of blocking the stellate ganglion is not a difficult one. Probably the best results are obtained with the patient in the upright position, sitting on the edge of the table so that the patient may lie down if he should develop a little nervousness and jittery feeling following the injection of the anesthetic solution. The neck is prepared as for any other injection and the operator takes his position in front of the patient. These slides show the operator to the side so that the detail could be better seen. The index finger is placed on the tip of the sixth cervical vertebra, which is located just behind the posterior border of the sternocleidomastoid muscle. This muscle with all the vascular and nervous structures in this area are pushed as far toward the midline as possible. A size 22 or 23 gauge needle of an inch and half or two inches in length is adequate for the injection. One does not need a big or a very long needle for the injection. After the deep tissues of the neck have been displaced towards or past the midline, the needle is inserted in an anteroposterior direction towards the base of the transverse process of the sixth cervical vertebra. When the needle is felt to come into contact with the bone, the hand may be removed from the structures of the neck. The needle will then be seen to change from the anteroposterior position to an oblique or almost lateral position. Maintaining the needle in contact with the bone, the syringe is attached to the needle and the needle aspirated. If there is blood or spinal fluid in the needle, the needle must be withdrawn and replaced, otherwise, it is not safe to deposit the anesthetic. About 5 cc. of a 1% solution are injected at this point. The reason for doing this is to inject the tissues about the vertebral artery and thus block the vertebral nerve. Following the injection of 5 ccs. the needle is withdrawn approximately two to three millimeters. It is again aspirated and in the absence of bleeding, an additional 10 to 20 ccs. of 1% solution of procaine is injected at this point. The solution which is deposited at this point diffuses in the tissue just outside the paravertebral fascia and it is in this area in which the sympathetic trunk lies. If the sixth transverse process has been selected, one blocks not only the stellate but also the middle cervical ganglion and the intervening tissues. The reason for having the patient sit up is that with the injection the anesthetic solution diffuses downward through the tissues, bathes the stellate ganglion and its branches and produces a block in this region.

The signs of a successful block are: constriction of the pupils, enophthalmos, reddening of the eyeball, and a drooping of the eyelid. That side of the face is warm and absent of sweating. The warmth and absence of sweating also apply to the upper extremity.

It would not be right in a discussion of this kind to publish what I think are such glowing results from the use of this procedure without bringing up the possibility of complications. The patient should be prepared by the use of a barbiturate which will lessen the severity of reaction, should one have a reaction to procaine. Probably two grains of sodium luminal given by needle twenty to thirty minutes before the block, or 1½ to 3 grains of a shorter acting barbiturate, such as nembutal, seconal, delvinal, or one of your choosing, given forty-five minutes or an hour before the block would be satisfactory. One of the dangers of injection is injecting the solution into a vessel, in which case the patient might have a severe reaction. Convulsions have followed the accidental deposition of procaine into the vascular system in large amounts. The most severe reaction that could occur is the so-called Herxheimer's reaction in which the patient has a convulsive seizure and expires. This had occurred on occasions. If one is not careful in selecting the sixth cervical vertebra or if one is unable to get a stellate block by using the sixth cervical transverse process as a landmark and attempts to use the seventh so as to get closer to the stellate ganglion, there is danger of a pneumothorax or hemothorax. The last that I would like to mention is the fact that there is a possibility of inserting the needle into the spinal canal, particularly if one uses a large needle and if one is not certain that the needle is against the bone before one injects. The aspiration on the needle before the injection will not only insure one that a vessel has not been entered but it will be insurance that the spinal canal has not been entered.

The guy who says "it can't be done," can't do it.

Prognosis of Heart Disease*

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THE RAPID progress of recent years made in medicine has reflected itself in cardiology, as well as other fields in the healing art. While it is true that the full significance of new discoveries is determined through variable lengths of time, even generations, some of our newer of these discoveries have altered and revamped the prognosis in heart disease.

Through the years from 1500 A.D. when heart disease was, for clinical purposes, unrecognized or not described, the concepts of heart disease have become radically altered. Investigations through autopsies gave the first insight of the diseased heart. Then Rosenbach in the nineteenth century and MacKenzie in the beginning of the present century proclaimed the functional state and what they termed "cardiac reserve" to be as important as, or more so than, the structural changes; and especially so when considering the prognosis in the patient with heart disease. It was after World War I that the conception of heart disease became based on the etiological background and firmly established the grouping of cardiac pathology as used at the present time. In conjunction with functional capacity and therapeutic classification, all of these classifications of heart disease are now well founded on clinical and pathological data and are universally recognized to be vital in arriving at the prognosis in any given heart disease.

The conception that despite heart disease, life may be prolonged and activities be little curtailed has at last become well established. This is especially true when considering chronic valvular disease with moderate or slight cardiac enlargement.

In any acute illness resulting in heart disease, it is natural for the clinician to have concern regarding the immediate outcome of his patient. Thus, the prognosis assumes an immediate nature. Should the patient recover from the acute phase of any disease and enter into a chronic state, leaving a diseased heart with which this patient is compelled to live in the future, the prognosis then must be considered from an ultimate standpoint.

White[1] admirably expressed ten years ago such a division in prognosticating heart disease, namely immediate and ultimate prognosis. The acute process which results in disease of the heart and a danger to life can in many instances gain recovery or regression to the extent of an adequate functional circulation. One only needs to mention the remarkable recovery of many cases of subacute bacteriological endocarditis now being reported which previous to the advent of penicillin were practically always fatal but which are now curable with this antibiotic.

Active rheumatic infection involving the endocardium is another example of an acute process attacking the heart in more than 90 per cent of the instances. Frequently, such a case gives grave concern as to the immediate prognosis; yet, when the infection is inactivated by agents such as pyramidon[2] or salicylates, the ultimate prognosis becomes extremely bright for a long and useful life, at times to the surprise of both doctor and family. During the acute stages, an open-minded attitude is the best to adopt with reference to prognosis. Most cases of acute rheumatic endocarditis properly interpreted and treated, keeping in mind the criteria for inactivity, apparently recover and later become useful persons for many years, the enlargement of the heart regressing to within normalcy, leaving only a murmur indicative of endocardial scarring. On the other hand, the overall prognosis should retain the thought of a reinfection at some future date.

The acute fulminating coronary episode with accompanying myocardial infarction, ushered in with shock, excruciating precordial pain, and profuse perspiration is the cardiologist's nightmare. For the first ten to twelve days following the establishment of a myocardial injury, no valid prognosis can be made. The mortality rate in coronary infarction is slowly but progressively being lowered in the last decade, and with the use of heparin and dicumarol, one expects this lowering to continue as the drugs, under proper laboratory procedures indicating the dosage, become more extensively used. Should the patient be living at the expiration of one month following the acute coronary accident, the chances for recovery are good and the prognosis changes from immediate to ultimate, and it is this type of case that I wish especially to discuss.

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It has been my experience that too many cases of coronary disease, with or without infarction, are so labeled without suitable evidence. Frequently, judgment is passed on a single EKG taken too soon after the onset of the attack and which fails to reveal the classical pattern of an injury curve. Serial cardiograms give the true picture and the stage of any myocardial infarction. There are still too many cases of suspected coronary thrombosis, with or without infarction, that are decided upon a single EKG. In arriving at the ultimate prognosis in a case of coronary thrombosis and especially in those cases with residual infarction, the diagnosis should never be in doubt. There frequently are cases of coronary thrombosis, with or without EKG evidence, that so completely recover that the former diagnosis of severe heart disease is held in doubt by competent internists. This leaves the patient in a quandary as to the veracity and competency of the physician who took care of him during the coronary accident. This bewilderment of the patient might have a definite bearing on the prognosis.

There are many factors to be considered in making the ultimate prognosis. For many years, while in New Orleans, I held an appointment from the Association of Medical Directors, to determine disability in cardiac cases for total and permanent disability insurance purposes and from the experience gained in these years, it occurs to me that the ultimate prognosis of a case with residual coronary infarction is greatly influenced by the following: vocation of the patient, financial and social status, whether or not sufficient disability coverage is available, the temperament of the patient, and the attitude of the patient's physician.

The physician frequently, in his eagerness to warn the patient of the serious nature of his ailment, portrays a gloomy prognosis, or there may be a misconception of the picture on the part of the patient. With pure honesty, the physician warns the patient to such an extent that the patient can only foresee the most pessimistic future. Years later, the patient comes to realize the pessimism was unfounded; asymptomatically, he lives years, fearing sudden death, while his doctor likewise comes to the same conclusion and either loathes to admit the error of judgment or he, by now, has changed his prognostic viewpoints. For example, in 1923 I saw a doctor, a bachelor of 40, who developed auricular fibrillation following a coronary thrombosis. The doctor was amply covered by a non-cancellable total and permanent disability policy; and solely because of this, he was advised to retire, which he agreed to do, although his income from an obstetrical practice far exceeded his insurance. Since the date of his disability, now twenty-six years ago, this doctor has married and from the marriage, there were two children, the older now serving his internship. During this long interval, the community lost a fine physician. The physician, for many years, lived in fear of sudden death, then ultimately wore out this idea, and has personally expressed to me the vicissitudes of a misspent life due entirely to the present day term "total and permanent disability" in many of our insurance policies. In my humble opinion, this term "total and permanent disability" has been a more frequent factor in determining ultimate prognosis in coronary disease than any other. The 30 - 60 - 90 day clauses contained in most of the insurance policies prompt the victim of coronary disease to make a decision too early, frequently with the aid of his physician. There should be breaking-down of the phrase "total and permanent disability." Total disability means complete disability which strictly is not the case, while the term permanent is entirely too permanent. The earlier workers in heart disease realized the mistakes and horrors caused by prognostications made years ago.

The clauses contained in disability insurance should be changed; the degree of disability should be variable from partial to total; the time, from temporary to permanent; it should be standardized and equitable to both patient and insurance company, then both will be justly served and I feel certain the ultimate prognosis of heart disease will greatly improve and will prevent patient and physician from practicing, in many instances, deceit, which has, at times, bordered to the extent of fraud.

Before closing, it is desired to merely mention prognosis in heart block and paroxysmal tachycardiacs. The same principles applied in coronary disease should guide the clinician in the heart block of Stokes Adams Syndrome. I know several cases of complete heart block, becoming stabilized and living comfortably over twenty years. Paroxysmal tachycardia and the onset of acute auricular fibrillation may have a serious prognosis for the time being, and especially if organic heart disease or a state of thyrotoxicosis be already present.

Acute heart failure may take place, mild or serious, pulmonary edema ensue; but as the tachycardia or fibrillation subsides by adequate and proper treatment, good health and reasonably normal cardiac function can be restored for years to come. Here, the immediate and ultimate prognosis must be kept in mind and the principles applied.

In closing, permit me to leave this concept. Prognosis of heart disease is one of the most difficult problems in medicine, even in the face of our fine instruments of precision and our progressive research and knowledge. Although there are general principles which might help in determining the prognosis of heart disease, a definite advance can be made by the clinician realizing the fact in many instances that in the acute and severe cardiac, the immediate prognosis may appear grave and this serious state followed by recovery to the extent that the ultimate prognosis will be good for many years to come.

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The Recognition of the Early Manifestations of Rheumatic Fever*

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INTRODUCTION—Rheumatic fever has long been recognized as an acute infectious disease of unknown etiology presenting the clinical picture of fever, polyarthritis, and myocarditis and characterized by exacerbations and remissions. It was originally thought to be a disease of the northern temperate zone and was considered to be seldom seen in the southern latitudes of this country; however, during the past few years it has become increasingly evident that acute rheumatic fever is seen throughout the United States. It does not always present the fulminating clinical picture of the acute illness and is more *often* seen in the subacute or chronic form. Levine has stated that the term "acute rheumatic fever" is an extremely unsatisfactory one because frequently there is *neither rheumatism nor fever*. He has suggested rather that we adopt the term "rheumatic state." It is not within the scope of this paper to cover the entire subject of rheumatic fever, but rather to focus attention upon the recognition of the pathology and symptomatology of the less obvious forms of the disease.

ETIOLOGY—The etiology of rheumatic fever is unknown and as in all diseases in which we do not know the cause, numerous theories have been offered. I shall only briefly mention the hypotheses currently proposed: 1) that the disease is in some way related to infections from group A beta hemolytic streptococci, either caused by an exotoxin of these organisms or by the entrance of a virus when the body resistance is weakened by repeated hemolytic streptococcic infections, 2) that it is a streptococcic toxemia not neessarily accompanied by bacteremia, and 3) that it is an allergic tissue response to these organisms. Future research will give us the answers which we are seeking, but the relationship of the disease to repeated upper respiratory infections cannot be disregarded.

PATHOLOGY—We cannot readily understand and interpret the clinical symptomatology of a disease unless we know the pathology which that disease produces in the body. Therefore it is of utmost importance that we understand the pathology of rheumatic fever if we are to interpret correctly the sometimes seemingly bizarre symptoms which we encounter in the subacute and chronic forms of the disease. Rheumatic fever is a generalized systemic affecting the entire cardiovascular system from the heart to the capillaries. It attacks the synovial, endothelial and serous membranes of the entire body and it thereby involves the conjunctiva, nasopharyngeal mucous membranes, pleura, peritoneum, meninges, endothelial lining of the heart and blood vessels, and the synovial membranes of the joints and bursae. The pathogenesis in which we are most interested, of course, is that of the heart. From a rheumatic endocarditis the disease progresses slowly to a myocarditis and sometimes a pancarditis, terminating eventually in valvular disease, cardiac arrythmias and finally decompensation. Laseque has said that the disease "licks the joints, pleura and the meninges, and bites the heart."

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SYMPTOMS—We are all familiar with the symptoms of acute rheumatic fever in which a child gives a history of acute follicular tonsillitis two to four weeks previously and is suddenly taken ill with fever of 102-104 degrees, painful swollen joints, with the pain and swelling migrating from one joint to another, leukocytosis, increased sedimentation rate, a mitral systolic murmur and perhaps choreiform muscular twitchings. Unfortunately, however, the disease does not always present itself to us so boldly and diagnosis is not always so simple. When the symptoms are slight they are frequently overlooked by both the patient's family and the family physician, and if they remain unrecognized they lay the foundation for subsequent rheumatic heart disease. In no other group of patients is it more imperative for us to take time to obtain a careful history and make a thorough physical examination. How many of us are familiar with the following type of history: A mother brings Johnny, age 10, into the office and says, "Doctor, Johnny came from school yesterday afternoon complaining of the stomachache and being nauseated. He had the same trouble about a month go and he just won't eat; he's underweight and nervous and I wish you'd give him a tonic to build him up." I am sure we have all heard a similar history many times. Several differential diagnoses immediately flash through our minds, but if we will take a careful history we will probably also find that Johnny has been underweight for several months, he has had frequent attacks of tonsillitis or other upper respiratory infections, that he gives a history of occasional epistaxis, he complains of headaches rather frequently and occasionally of pains in his arms or legs at night. He also may complain of occasional vague pains in his chest with or without a slight cough, he as no appetite and he complains rather frequently of nausea and generalized abdominal pain and sometimes of otherwise unexplained vomiting. He may have urinary frequency, mild sweats, and he is a nervous fidgity child. As we observe this child on the examining table we note that he is underweight, pale and anemic, he shows marked facial pallor and he is continuously in motion, unable to sit or lie still upon the table. Physical examination reveals that he has a temperature of 99 degrees, or he may have none at this time, but his mother states that he had a little fever when he came home from school yesterday afternoon. His pulse rate though is 120-130 of regular rhythm and volume, his blood pressure is within normal limits and he is 10-15 pounds underweight. The remaining positive physical findings are limited to his heart where we hear a mild interspace at the sternal border. His abdomen reveals only generalized abdominal tenderness. Examination of his extremities may reveal the presence of rheumatic nodules. His blood count is within normal limits except for a moderate anemia, his sedimentation rate is normal, his urinalysis shows an occasional white or red blood cell, x-ray of his chest is normal with no cardiac enlargement, his initial E K G may be within normal limits and stool examination and agglutination tests are negative.

LABORATORY FINDINGS — Unfortunately we have no definite laboratory tests for the diagnosis of rheumatic fever, which makes it all the more important that we take a careful history and make a thorough physical examination. In acute fulminating cases there is a relative leukocytosis and an increased sedimentation rate, however, in milder cases the white blood count may be within normal limits and the sedimentation rate normal. In early myocarditis the chest x-ray shows the heart measurements to be within normal limits. In early rheumatic myocarditis the E K G may be within normal limits before any alteration in conduction time and prolongation of the P-R interval has occurred.

DIFFERENTIAL DIAGNOSIS—We must consider in our differential diagnosis tuberculosis, undulant fever, disseminated lupus erythematosis, periarteritis nodosa, subacute bacterial endocarditis, and parasitic infestation.

DIAGNOSIS—Upon what points then do we consider a diagnosis? With the pathology of rheumatic fever in mind we see a child with a low grade febrile disease manifested by 1) epitaxis denoting capillary damage, 2) nausea, vomiting and generalized abdominal pain denoting rheumatic peritonitis, 3) mild chorea and headaches indicating meningeal involvement, and 4) tachycardia with systolic and diastolic murmurs indicating early myocarditis. Let us now consider the most important of our physical findings namely those referrable to the heart. In no other disease do we more consistently find a tachycardia so much out of proportion to the temperature curve, for we find a pulse rate of 100-140 with a temperature of 99-100 degrees. Next, we consider the heart murmurs. Keeping in mind our pathology, we know that rheumatic fever begins its pathogenesis in the heart by affecting the endothelial lining of the mitral and aortic valves. It progresses to a rheumatic carditis and occasionally to a pericarditis, and through the course of months and years results in mitral stenosis, aortic stenosis and cardiac arrythmias. In early rheumatic myocarditis we are usually able to hear with the stethescope significant murmurs long before we can find electrocardiographic evidence of prolonged conduction time. In rheumatic carditis we most frequently hear a soft blowing apical systolic murmur due to a relative mitral insufficiency and very shortly thereafter an aortic diastolic murmur in the third left interspace at the sternal border due to relative aortic insufficiency. This murmur can usually be heard in the third left interspace long before it is heard over the aortic area. The mitral diastolic murmur of mitral stenosis is not heard early in the disease since the stenotic process takes months and sometimes years to develop.

TREATMENT—The most important aspect of therapy is the treatment of the myocarditis and as in all infectious myocarditis the most important measure is absolute rest in bed. The patient should be kept on absolute bed rest for at least one month after all signs of activity have disappeared and until the pulse rate has returned to normal. In addition the patient should be given large doses of salicylates by mouth (1 gr. per pound of body weight per day), sufficient sedatives to keep the patient quiet in bed, hematinics, and a high-vitamin, high-caloric diet. In addition several investigators have suggested the use of vitamin E. The sulfa drugs and penicillin have been found of no value in the treatment of rheumatic fever other than as prophylaxis from subsequent upper respiratory infections after the acute activity has subsided. Unfortunately economics must enter into our therapy at times and you may ask, Is it worth it to take this child out of school and put him to bed for two or more months with such a smouldering disease? Certainly we do not hesitate to put a tuberculous patient at absolute bed rest for periods of months or years and we must look upon the treatment of rheumatic patients in a similar light until we learn the etiology and have an antibiotic with which to combat the disease. Obviously sanatorium care of rheumatics is optimal, but unfortunately the facilities are lacking. The justification for extended treatment lies in the reduced mortality rates. The figures of the King's County Cardiac Clinic show that they selected two groups of rheumatic children as near alike as possible as to age, duration of disease, number of attacks and age at onset of disease and observed them for seven years. Of 373 treated, eight died; of 312 untreated, twenty-one died —a mortality rate three times as great in untreated cases. I think we will all agree that treatment is worth that price.

SUMMARY—Rheumatic fever is an acute infectious disease of unknown etiology characterized by exacerbations and remissions and seen more often in these latitudes in the subacute or chronic form.

The relationship of the disease to repeated upper respiratory infections, usually with group A beta hemolytic streptococci, cannot be disregarded.

Rheumatic fever is a generalized systemic disease involving the cardiovascular system and the synovial and serous membranes of the entire body.

There are no reliable laboratory tests for the diagnosis of early rheumatic fever.

Absolute rest in bed until one month after all signs of activity have disappeared and until the pulse rate has returned to normal is essential to prevent permanent heart damage during the active phase of the disease.

When we teach the laws of growth, development, human reproduction, and of the preventable diseases from which man suffers, then is the time to tell the truth about alcohol.—Haven Emerson, M.D.

Trauma to the Soft Tissues*

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TRAUMATIC injuries to the skin, subcutaneous tissues, muscle, fascia, tendon, blood vessels, and nerve are included in our discussion. The response of the body to injury depends to a large extent on its kind and severity. In general, the simplest injuries are those that damage cells without impairing their viability.

Mechanical or traumatic injuries result in wounds. The mechanical wounds resulting from trauma will be discussed arbitrarily in five groups—contused, open, crushed, infected, and avulsed.

A contusion or bruise is an injury of the subcutaneous tissue inflicted usually by a blunt object with laceration of the subcutaneous tissue without marked injury to the overlying tissue, the skin or mucous membrane, where the damage may be microscopic. Ecchymosis or hematoma may result. The treatment for the contusion if seen immediately, consists of cleansing, and application of pressure and cold packs to stop extravasation and hemorrhage. Rest of the part is usually desirable to obtain optimum healing in the shortest period of time. After twenty-four hours the application of heat will increase the blood supply and facilitate healing. If a hematoma is present it may be aspirated, and where this is impossible incision and drainage may be necessary. Pressure should be applied to prevent prolonged drainage and dead space. Hematomata may become infected and these of course should be incised and drained. In severe contusion where extensive damage to the subcutaneous tissue has occurred, severe contracture due to scar or atrophy may occur, in which cases active and passive motions and exercises are indicated.

There are many types of open wounds: an abrasion consisting of a tear of the superficial layers of the epithelium which may be associated with effusion of serum and capillary hemorrhage; punctured wounds made by sharp instruments which may be deep; lacerated wounds produced by dull objects producing torn and uneven edges; and incised wounds which are straight and even with smooth edges. Infected wounds occur where a previous contamination has been present and sufficient time has elapsed to allow tissue invasion by bacteria. Avulsed wounds denote a loss of a part of the body substance, the scalp and extremities being the most often involved.

Wounds involving the skin and subcutaneous tissue to such minor extent that only closure without suture is necessary, may be classified as superficial ones. Treatment should be started at once by eradication of comtaminating organisms. Abrasions should be washed gently but thoroughly with soap and water and antiseptics if possible should be avoided, particularly strong ones because of tissue cell damage. If used 2 per cent aqueous solution of iodine or acriflavine (1:1000) are among the least harmful. Sulfa powder may be frosted onto the area and a dry sterile dressing applied. Immobilization of the part for a day or two may be necessary .Wounds that do not bleed are more apt to become infected. At times it may be necessary to open them and clean them. Many punctured wounds should be débrided. Where there is any chance of contamination and infection, tetanus antitoxin should be given if not previously immunized against tetanus, and on occasion despite previous immunization where the wounds are extensive with large amounts of devitalized tissue present.

Before deep wounds are repaired, the paient should be thoroughly examined for other injuries some of which may be more extensive than the local wound. Control of hemorrhage if present, is obviously the first step. This may be accomplished by pressure dressing or with a gauze flat, individual ligature may be necessary where the bleeding is more extensive, and where necessary a tourniquet may be required. When a tourniquet is used, however, it should be loosened every twenty to thirty minutes to allow flushing of the wound and prevent gangrene. It should not be applied too snugly as damage to the nerves and blood vessels may occur.

Shock must be treated along with arrest of hemorrhage and of course plasma, blood transfusion, or intravenous infusions are indicated. For syncope lowering of the head or inhalations of aromatic spirits of ammonia will usually suffice.

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*Presented at staff meeting, Charity Hospital, Jackson, Miss.

Examination of the wound should be carried out as soon as shock and syncope are relieved. The wound is inspected for foreign bodies, devitalized tissue, injury to tendons and nerves and underlying structures. A careful sensory and motor examination to the area distal to the injury is very important. If the wound is over the skull, intracranial injury and skull fracture may be present, if over the body injury to the internal organs, and over the extremities fractures, nerve and tendon injury.

The wound should be prepared by first cleaning the area about the periphery using soap and water followed by an ether or other fat solvent and then a mild antiseptic solution. After this is done novocaine may be infiltrated from this prepped periphery so that debridement and irrigation with normal saline of the wound may be carried out without too much pain to the patient.

The decision as to the type of closure must then be made. It may be closed primarily if clean, if potentially infected a drain should be used and allowed to remain one day, if more severe it may be closed secondarily or allowed to heal by granulation.

The most important factor in determining the type of closure in wounds appearing clean, is the length of time between injury and treatment. In general wounds more than twenty-four hours old are too deeply invaded by bacteria to be closed primarily; those under eight hours unless contaminated are usually suitable for primary closure.

In those in between, the amount of contamination, degree of infection or inflammatory process, and amount of traumatized tissue present will determine the type of closure. Adequate debridement will however allow primary closure except in wounds of more than eight hours duration, in which case generally, debridement should not be done to any great extent because it will only spread infection and cause cellulitis.

Closure should be done with interrupted sutures, closing all dead space and where possible uniting fascia to fascia. If the wound is certainly clean then cotton or silk sutures are preferable even as buried sutures as they do not cause as much reaction and are not so likely to start an infection, however if there is doubt as to the presence of infection catgut is preferable because the non-absorbable sutures once in an infected wound will cause prolonged drainage.

Again in these contaminated wounds and infected wounds tetanus antitoxin and toxoid are a necessity. Sulfa power may be used as a frosting in potentially infected wounds, but should not be used in clean ones.

When a major nerve has been severed it should be repaired, and if the ends are jagged, it should be cut across evenly with a sharp scalpel. They should then be united end to end with care being made not to rotate the ends. Mattress sutures of fine silk should be used through the epineurium only. Tendons about the wrist and hand particularly, should be repaired primarily only when aseptic healing is a certainity. Fine wire sutures as used by Bunnell may be preferred for approximation, the hand being immobilized for 15-21 days without motion.

Crushing injuries involving the soft tissues are apt to be accompanied by marked extravasation of serum and hemorrhage from the smaller blood vessels causing accumulation of large amounts of fluid which may compress the larger vessels with resulting gangrene of an extremity. Treatment of crushing injuries should be conservative for very small amounts of tissue are known to nourish a large distal portion and by conservatism many an extremity has been saved and unnecessary amputations performed. Conservative treatment is comprised of adequate debridement, close and daily observation, occasional ice packs and other methods to diminish the blood requirements for the extremity, incisions over collections of fluid to relieve pressure, and amputation only when these means fail.

When soft tissue wounds become infected, early drainage is necessary. Rubber drains are inserted, wet packs and moist dressings applied, and sulfa, penicillin and other chemotherapeutic agents used locally and systemically.

Other types of trauma include thermal, chemical, and electrical injuries. These subjects are too extensive to cover in a symposium of this type, but since the skin is the largest organ of the human body and burns are one of its worst mutilators, a few words should be said concerning burns. It is felt that with burns of any degree the primary treatment is that of combatting shock and replacement of plasma depletion. Hence before anything is done to the local lesion, opiates should be given and plasma if possible given in sufficient amounts. Where plasma is not available whole blood or 5 per cent glucose in saline and other infusions may be given. After the shock is over the patient should be taken to the operating room where under general anesthesia the burn is cleansed and debrided and sterile pressure dressings over fine mesh gauze are applied. Unless infection occurs these should be allowed to remain for ten to twelve days when the dressing is changed and further debridement done. By using pyruvic acid paste or by surgical excision of dead tissue efforts should be made to attempt to be in position to graft skin by the end of three weeks. This of course presupposes the systemic care of the patient with maintenance of fluid and electrolyte balance as well as blood levels during the interim.

Organizations for Medical X-Ray Technicians*

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The American Registry of X-Ray Technicians (A.R.X.T.) is the national examining board which certifies x-ray technicians. It establishes and maintains the educational standards and requirements which an applicant must meet. The Registry Board is composed of four outstanding radiologists and two qualified registered technicians (R. T.) who are members of the American Society of X-Ray Technicians, all of whom serve gratis. Certification by the Registry establishes the professional qualification of registered x-ray technicians—proof that the minimum requirements in education and training have been fulfilled.

The aims of the Registry are to raise and maintain the ideals and standards of x-ray technicians, to recognize the value of their services, and to promise an ethical relationship between technician, radiologist, and the public.

All x-ray technicians, whether registered or not, are receiving the advantages of the work done by those who have spent their time and money organizing and carrying on this work of the A.R.X.T. and the American Society of X-Ray Technicians (A.S.X.T.).

Why be a registered x-ray technician? Any person who is interested in his work should want to improve himself. That is possible by becoming a registered technician and then joining the only national organization for x-ray technicians in the U.S.A. The American Hospital Association, during inspections, inquire if the technician is registered, and give more points to the hospital which have, at least, a registered chief technician. Like a degree, R.T. is the symbol which indicates the completion of a certain prescribed amount of work and study.

Why hire an R. T.? In order to be registered the technician must have met the required minimum standards. Therefore better technical work may be expected from trained technicians. An R. T. meets with others in the same profession and learns the newest technics, returns home and uses his knowledge, which would provide you, the doctor, with a technician of broader experience and interest, who should produce radiographs of higher diagnostic quality.

Legally, the doctor assumes the responsibility for the work done by his technician, and therefore should be able to trust and depend upon him implicitly.

The technician should have a universal understanding of technical problems, and so be able to supply films of the quality desired by the employer. Through their organizations, the technicians have sought to share their knowledge and improve their technique in keeping with the desires of their employers. The Registry, in its way, seeks to apply a standard of training and qualifications which can lead to more uniformity in results, in addition to whatever can be accomplished to inspire that dependability, and competence required of a skilled assistant.[1]

Some universities favor the stand that an x-ray technician should be given the opportunity to achieve a B.S. degree while preparing for his life's work.

The American Society of X-Ray Technicians is an organization composed of registered members who are interested in the welfare of fellow technicians and who work to further their interests. It is a co-sponsor with the American College of Radiology of the American Registry of X-Ray Technicians. The Society provides a national convention each year, the meeting this year to be held at the Benjamin Franklin Hotel in Philadelphia, Pennsylvania, June 3-8.

The convention is a medium for exchange of ideas. Refresher courses are offered in radiographic technique, taught by some of the best instructors in this country. A few of the instructors to date have been, D. A. Rhinehart, M.D., K. D. A. Allen, M.D., and L. G. Idstrom, M.D.

The Committee on X-Ray Protection of A.S.X.T. is working with the Bureau of Standards and the American College of Radiology to help establish and maintain adequate protection for those working as x-ray technicians.

The Society publishes a journal, **The X-Ray Technician,** which furnishes the technician with information on all subjects within his field. The journal is the only publication of its kind for x-ray technicians published in the U.S.A.

The A.S.X.T. furnished a method of contact between affiliated societies. We are glad the Mississippi State Society of X-Ray Technicians is an affiliate of the A.S.X.T. Official representatives of the society are sent to state meetings. In 1949 both D. A. Rhinehart, M.D., president of the Registry Board, and Erminda R. Clarke, R.T., president of the American Society of X-Ray Technicians, were on the program of the state meeting. In 1950 Alexander Turner, R.T., secretary-treasurer of the A.S.X.T. was on the program.

In 1951 the state organization is to meet at the Pinehurst Hotel in Laurel, Saturday, November 3. E. J. Harris, M.D., radiologist at Baptist Hospital, Jackson, is to lecture on radiographic anatomy and H. O. Mahoney, well known lecturer, will discuss positioning. You are invited.

Registration as an x-ray technician and membership in A.S.X.T. is in no sense belonging to a union. Both the A. S. X. T. and A.R.X.T. are on record as opposed to unionization.

The A.S.X.T. not only needs the active and financial support of every R. T. who is genuinely interested in his profession and in the welfare of the fellowship, but the active support of every doctor of medicine.

To be an R. T. is highly to be desired. To be a member of A.S.X.T. and M.S.X.T. is both a privilege and a duty.

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Head Injuries*

HOWARD A. NELSON, M.D.
Greenwood, Mississippi

There are still many things to be learned about head injuries, but the progress made in recent years has been sufficient to provide a working basis for the treatment of these cases. For the purpose of this discussion, the skull will be described as a bony container of a fixed volume. Into this volume nature has placed three substances: brain tissue, spinal fluid, and blood. A disturbance of any one of these factors will produce corresponding changes in the remaining two. The final result of these changes, regardless of where originating, will be cerebral compression.

Since we are faced with a confusion in terms relative to head injuries and faced with the fact that these terms offer no solution to the treatment of the patient, I have chosen for our discussion patients which fall in three clinical categories, namely:

1. The fatal injury.
2. The non-fatal injury.
3. The indeterminate injury.

The fatally injured patient is in profound collapse with all the classical symptoms of traumatic shock. Oftentimes these individuals suffer from multiple injuries such as chest injury, fractured pelvis, and broken legs. The coma is deep; there is no response to painful stimuli by pressure over the supraorbital notch; pupils are fixed and fail to react; and all the deep reflexes are absent. The pathological lesion here is one multiple contusion and laceration of the brain with rapidly oncoming cerebral edema. Death usually occurs within a few hours.

The treatment of these cases may be summarized as follows: Immediately it is that for shock of any type. External heat may be applied by means of a heat tent or cradle. The heat must not be too great or else it will contribute to rather than improve the shock. The administration of intravenous blood plasma, the amount of which varies. At first it may be given rapidly and slowly, later as determined by blood pressure reading and other signs or symptoms of the patient's response in a satisfactory manner. The only accurate means of determining the need of plasma is by the hematocrit and red blood cell determination. The patient should be kept flat. If the patient is bleeding from the ear his head should be turned to the affected side. If there is cerebrospinal fluid coming from the nose, the head may be elevated. The position of the patient too may be determined by the amount of secretion in the oral pharynx and trachea. Here the head should be low and a suction apparatus used. Do not attempt to remove the patient's clothing. Control the active hemorrhage with hemostats and a temporary bandage. Give oxygen if available. Check frequently and record the gross neurological signs such as pupillary, deep, and plantor reflexes, the coma, and movements of the extremities. No x-ray or elaborate hemorrhage arrests or complete physical examination should be made until the shock has subsided.

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*Read before the Delta Medical Society, Sunflower, Miss., October 1949.

If the patient survives, treat as described in the indeterminate injuries.

The patient with the non-fatal injury is usually brought in semi-conscious, restless, irritable, and with a slight degree of shock. He or she usually answers questions and moves all four extremities. The pupils react and the reflexes are present. The pathology in these cases is usually contusions perhaps with petechial hemorrhages and later a slight degree of cerebral edema.

The treatment for these cases is rest in bed and sedation, preferably paraldehyde either orally or per rectum, or possibly one of the barbiturates. Morphine is never used since it has a predilection for the respiratory center which it depresses.

Frequent observations should be made to determine if the sleep has become a coma. Check the pupillary reflexes and the extremities. Oftentimes the picture will change entirely within a few hours after admission; hence the value of the frequent observation and neurologic examination.

After the patient is quiet and tractable it may be reasonably well to do a spinal puncture. In this case the spinal puncture would be done to determine the presence or absence of blood in the spinal fluid. If the spinal fluid is bloody, the patient should be kept at absolute rest for at least three weeks. This blood indicates either a contusion which is leaking or a laceration of a vein. It is felt that only by adequate rest in bed can one avoid possible sequelae. The post-traumatic syndrome of headache, dizziness, lack of concentration and apprehension, seems more prone to develop in those who do not have adequate rest in bed following their injury. Of course, the syndrome may develop in spite of anything which is done to avoid it.

The patient with the relatively minor head injury should be kept under observation at regular intervals for a considerable time after the injury. Some patients with this type of injury develop chronic subdural hematomata or else they develop post-traumatic epilepsy. When they are dismissed they should be told to report at regular intervals, to describe their feelings or to describe any new symptoms in order that prompt treatment may be adopted.

The patient with an indeterminate injury may be described as one in which the coma is relatively deep and the picture of traumatic shock conspicuous. Painful stimuli cause movements of all four extremities, the pupils react poorly to light, the deep reflexes may be present with the sign of Babinski. In the first few hours the picture of shock disappears, being replaced by a full bounding pulse, rising blood pressure, fever, and continued coma. This condition may remain unaltered for many hours or even days. The pathology here is multiple contusions and multiple minor lacerations of the brain with petechial hemorrhages and cerebral edema.

Treatment of the patient with an indeterminate injury may be described as follows: Treat the traumatic shock as previously discussed. Elevate the head of the bed. Chart the blood pressure and pulse on the same chart. Change the patient's position frequently. Treat restlessness with paraldehyde (no morphine). Continued oxygen by nasal tube if available. Observe frequently for changing clinical pictures. The control of increasing intracranial pressure is of paramount importance. This problem is best handled by cautious dehydration using 10 to 20 per cent glucose solution intravenously. Therapeutic spinal puncture and decompression (very rarely).

Ultimately, most of these patients who die, do so because of increased intracranial pressure. The probable mechanism of this is, at first, hemorrhage into the intracranial cavity and, later, swelling of the brain. The only method which appears is the method of dehydration by the limitation of fluid or by the administration of hypertonic glucose solutions. The patient should receive 500 cc. of 20 per cent glucose twice a day and perhaps another 500 cc. of 10 per cent glucose intravenously. When the increased intracranial pressure appears to be coming on very rapidly, one may use a solution up to 25 per cent; rarely if ever does one use a solution as strong as 50 per cent.

Dehydration cannot be continued over two or three days without the possibility of dangerous systemic reaction; in fact, just as dangerous a systemic reaction as the reason for dehydrating the patient. As soon as this stage is reached, one should make a speedy attempt gradually to obtain a proper fluid balance in the patient's system. The toxic reaction manifests itself by deterioration in the consciousness of the patient, relatively high fever, rapid pulse, and a general decline in the patient's condition.

The value of spinal puncture in relieving increased intracranial pressure is extremely debatable. In the first place, spinal fluid reforms rapidly, and in the second place it acts as a fluid tampon against the swelling of the brain and when it is removed it merely allows the brain to expand much more rapidly than it would in the presence of the uniform pressure the fluid exerts. If it is used at all it can only be used to provide temporary respite to the medulla oblongata from the increase in intracranial pressure. This respite would not hold for more than three quarters of an hour to an hour. If it is used for this purpose, a manometer should be used and the pressure in the manometer should be halved. To withdraw a lot of spinal fluid suddenly from a patient with markedly increased intracranial pressure would certainly be dangerous. In the event that a régime of spinal puncture and the use of intravenous solutions is adopted in a case of this kind, it would be well to divide the procedures into six hourly intervals so that every six hours a spinal puncture alternating with the use of intravenous solutions is employed. Incidentally, a spinal puncture would never be done on a patient who is in shock.

The only other available method of lowering increased intracranial pressure is by decompression. Obviously if a decompression is to be performed, it should be done by a neurosurgeon.

In discussing the management of injury to the cranial bones conservatism should be the underlying principle of treatment of injuries to the cranial bones. No attempt should be made to deal with any of these conditions until collapse or rather traumatic shock has passed off. The treatment of a linear fracture is nil. In the case of a compound fracture the scalp wound must be properly and immediately repaired, thus converting it into a simple wound. When the wound is cleaned, one or even two loosely tied sutures will be sufficient. This should be done with ordinary sterile precautions and at the same time the bone underlying the defect should be felt with the gloved fingers or lightly probed with the sterile probe to make sure that there is no defect in the cranial bone underlying the scalp wound.

With regard to depressed fractures, the question whether or not they should be elevated is still raging. As to whether or not a fracture should be elevated depends entirely upon the degree of depression and the area over which the depression occurs. If there are any neurologic signs referable to a depression it should be elevated. With reference to treatment of compound fractures as long as no spinal fluid escapes the wound and as long as a pulsating brain is not seen one can't wait until a formal operation can be done in a clean field, in other words, after a lapse of three weeks or a month following the primary suture of the scalp incision. If the compound fracture is operated on immediately and depressed fragments removed which have been previously wedged down into the surface of the dura, the subarachnoid space may immediately come in contact with the dirty wound; consequently it appears safer to wait until the scalp wound is healed and the depression of the bone and the damage to the brain can be dealt with at a more formal procedure.

A much more common problem is the basal skull fracture in which blood and spinal fluid escape either from the nose or from the ear. Very little of a therapeutic nature can be done for these patients except for postural drainage and the use of sulfonamides. The patient should be placed with the affected side down so that blood and spinal fluid may escape from the ear. The external auditory meatus should be kept clean with alcohol and a sterile dressing should be placed over it. The same is true to some extent of bleeding with escaping spinal fluid from the nose. As soon as such a patient is out of shock he should be propped up and the head should be placed in such a position that there is a free escape of spinal fluid and blood from the nose. The reason for this is that one wishes to avoid the possibility of spinal fluid escaping into the nose and there coming in contact with the heavily bacteria-laden nasal mucous membrane and then perhaps be returned into the clean cranial cavity to cause meningitis. This postural drainage will assist materially in obtaining fewer and fewer cases of meningitis.

In presenting this paper you will note that I formulated my discussion along the lines for the general surgeon or practitioner and did not pretend to invade the domain of the new neurosurgeon. It was with this viewpoint and the outlook for the mechanization of our agricultural section that I felt a discussion of the management of these cases on our level and with the access of the community hospital would be appropriate at this time.

Wm. Milton Adams, M.D., and Lorenzo H. Adams, M.D., announce the association of James H. Hendrix, Jr., M.D., in the practice of plastic, maxillofacial and hand surgery, 902 Madison Avenue, Memphis, Tennessee. Telephone 5-1721.

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The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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Editorials

TO PAY OR NOT TO PAY

The compulsory payment of the twenty-five dollars to the American Medical Association in order to be a member of our state association has caused some trouble in our ranks. It is certain that the twenty-five-dollar fee has been used to inform the public in a most helpful manner. We must not let this difference of opinion weaken our loyalty for our state association nor for the work of the American Medical Association. If we look to the future hopefully, it is very important for every doctor to be a member of both his state association and of the American Medical Association. They must work hand in hand. However, we do admit that it seems unwise to make membership in the AMA obligatory in order to belong to the state association. Still we can iron all this out and be cordial brothers in a great cause. Let us seek the course of wisdom, know our hearts are right, and go forward.

TO CONSIDER REHABILITATION CENTER

President Guyton calls attention to the consideration of a Vocational Rehabilitation Center at our coming medical meeting in Biloxi. This question is very important from a humanitarian, social, and economical standpoint. The State Medical Association should become a big factor in its formation and in directing its policies if we are to have it. One of the greatest fields in medical service is now in rehabilitation. Our four-year medical school must take note of this. As war goes on and accidents multiply this field becomes more and more important. To convert a person from a liability to an asset to human society is a work of untold benison, and is being undertaken by several groups. The rehabilitated worker has proved to be very efficient and also to be more dependable. His ability to make his way leaves him much more content and happier.

We hope to see our association approve the establishment of a great rehabilitation center, which is even now an urgent need. Its field of service is growing every day. The restoration of the handicapped is increasingly important in the social and the economic life of our people. One fine center should extend adequate services to the people.

MR. CARTER DOCTOR'S DAY LUNCHEON SPEAKER

This year a distinguished layman will be the guest speaker for the Doctor's Day luncheon, when Mr. Hodding Carter of Greenville, editor of no mean ability, and Mississippi's leading journalist, will undertake, as he succinctly puts it, to prescribe for the doctors. This annual highlight of the convention is to be held at the Buena Vista when members of the Auxiliary to the Mississippi Medical Association honor their doctor husbands.

Mr. Carter is editor of the **Delta Democrat-Times,** through which medium he has confidently pursued his conviction that upon Southerners rests the responsibility of building just and righteous relationships between races and religions. He has widened his influence recently by purchasing the Natchez **Times.** Author of a syndicated column and several books, Mr. Carter's determination to prove that frank analysis of the South's problems is the only intelligent route for sound adjustment has placed him in the forefront of thinking Southerners. His presence at the state meeting is generally welcomed and with anticipation.

Every doctor in the state should attend his state medical meeting if at all possible. He can help and be a helper.

The J. A. Majors Book Company is a mighty good friend to all the doctors. Service is its watchword, courtesy never wanting. Dr. Majors is a native of Mississippi and most beloved.

Take note of our exhibitors and visit their booths. Keep in mind that the representative is eager to serve. We welcome each and every one to our state meeting.

FROM THE PRESIDENT

To the Members of the Mississippi State Medical Association:

I didn't realize until a few days ago the seriousness with which many good men are taking the question of being compelled to pay the A.M.A. assessment of $25.00 in order to retain membership in the Mississippi State Medical Association. Dr. Dye, our secretary, tells me that up to this date less than eight hundred members have paid dues for 1951. Last year eleven hundred were enrolled. Two good sized societies have not reported to him yet. When their rolls are in the situation will look somewhat better.

I have encountered much criticism of the requirement to pay the A.M.A. dues. The gentleman who introduced that resolution in the House of Delegates was one of our delegates to the A.M.A. He has been one of our best members for many years. He made a very impressive talk before the delegates, in substance emphasizing the fact that the A.M.A. had fought successfully against socialized medicine so far, and it takes much money to do this. This fight was for us as well as the whole nation, and we should share our part of this expense. He was proud of our Association and he wished us to show our appreciation of the work of the A.M.A. by being the first state association in the union to have our members paid up 100% . I am sure he had no thought of wanting to force any one to pay just for the pleasure of exerting pressure. He was sincere in thinking it is our duty and should be our pleasure to pay the assessment.

Any criticism of the action taken should be leveled at the House of Delegates. No one man could have put it over if he hadn't convinced the delegates it was the proper thing to do. I believe I am right in saying not one vote was cast against the resolution. Some who were present may not have voted, however.

It is my understanding that the secretary of our Council of the State Medical Association, Dr. H. C. Ricks, was told by Dr. Lull, secretary of the A.M.A., last fall that any one who had not paid the 1950 assessment, but who would resign membership before January 1, 1951, could then pay the 1951 dues and renew membership in the American Medical Association for 1951. However, the A.M.A. ruling is that those who did not resign in 1950 will have to pay the 1950 assessment before he could renew his membership in the A.M.A. for 1951.

I have just returned from the Tennessee State Medical Association in Nashville. They have a larger enrollment this year than ever before and their secretary, Dr. Foster, tells me 86 per cent of their members paid the A.M.A. assessment without compulsion. Their total local and state dues amount to $25.00 besides the A.M.A. assessment. I don't believe Tennesseans are any better or more loyal people than we.

I am urging members to forget the idea of "not wanting to be forced to do something," and to respond loyally to the associations at this time by continuing membership over the State Medical Association and the A. M. A. Let us not wait for other physicians over the nation to pay our part. Unless it works a hardship financially I feel that it is a duty for each one to bear a part of the expense which is being incurred in the fight against socialized medicine. This fight is not over. If we are going to participate in the fruits of the A.M.A. efforts, we should be willing to participate in the expense.

B. S. Guyton, President
Mississippi State Medical Ass'n.

FROM DR. WALL

There is quite a lot of misunderstanding among the doctors of our association as to the payment of dues to the American Medical Association. According to the by-laws of the Mississippi State Medical Association, as adopted last May, membership in the Mississippi State Medical Association is to be concurrent with membership in the American Medical Association.

In 1950 only 523 doctors paid their dues to the A.M.A., and that means they are not members of the Mississippi State Medical Association. Furthermore there are 12 counties in which no doctor has paid his dues, and this necessarily causes these counties not to have any representation in our House of Delegates when it meets in Biloxi next month.

All of this puts our profession, so far as Mississippi is concerned, in a rather unenviable light and furnishes Oscar Ewing and his socialistic group in Washington about the best propaganda they could possibly wish to have in their fight against organized medicine.

It is not necessary to recite to you the benefits derived from membership in the A.M.A. and the Mississippi State Medical Association —what these organizations have done to insure our protection.

There are only three ways to be excused from paying A.M.A. dues and still be a member of that organization, namely:

1. The doctor must have retired from practice of medicine.
2. Has been declared by his component society that the payment of dues would cause a financial burden to him.
3. Has resigned from A.M.A. prior to December 31, 1950.

In comparison with the dues of the various labor organizations these dues are small, and surely the benefits derived are even greater than those the labor groups are receiving.

If you are a delegate (and if not will you contact your delegate) will you try to get the doctors of your county to pay their dues and thus save them from a continuing delinquency? Have them pay the 1950 dues now, and they then can wait until December 31 to pay the 1951 dues.

FIFTY-YEAR MEETING

The Fifty-Year Club will hold its annual meeting this year on Tuesday noon, May 15, at the state meeting. Since our last meeting we have lost some fine and valuable men, but we have taken in others. In this club will be found proof that service is the measure of real greatness and these men stand at the very top. Not only have they been faithful and efficient in the application of the best known in medicine, they have encouraged, befriended, and advised a trusting clientele, entering into their pleasures, joys, and sympathies. Day and night they have been on duty as counselor, servant, and protector. Some men in the club have practised more than sixty years. They have kept their chin up, their conscience clear, and their own requirements high. When a man keeps mentally and physically fit he is worth more to human society every day he lives, even though he lives to be a hundred.

Year before last the Fifty-Year Club was addressed by Dr. Rudolph Matas of New Orleans; last year by Dr. Andy Hall of Mount Vernon, Ill., the man of the year selected by the American Medical Association; and this year our beloved Dr. Seale Harris of Birmingham will be the speaker. Dr. Harris is now writing a book on longevity. Both Dr. Matas and Dr. Harris hold membership in the Fifty-Year Club in Mississippi, these two great medical spirits bringing a benediction of rare luminosity to its gathering.

VISITS MISSISSIPPI FRIEND

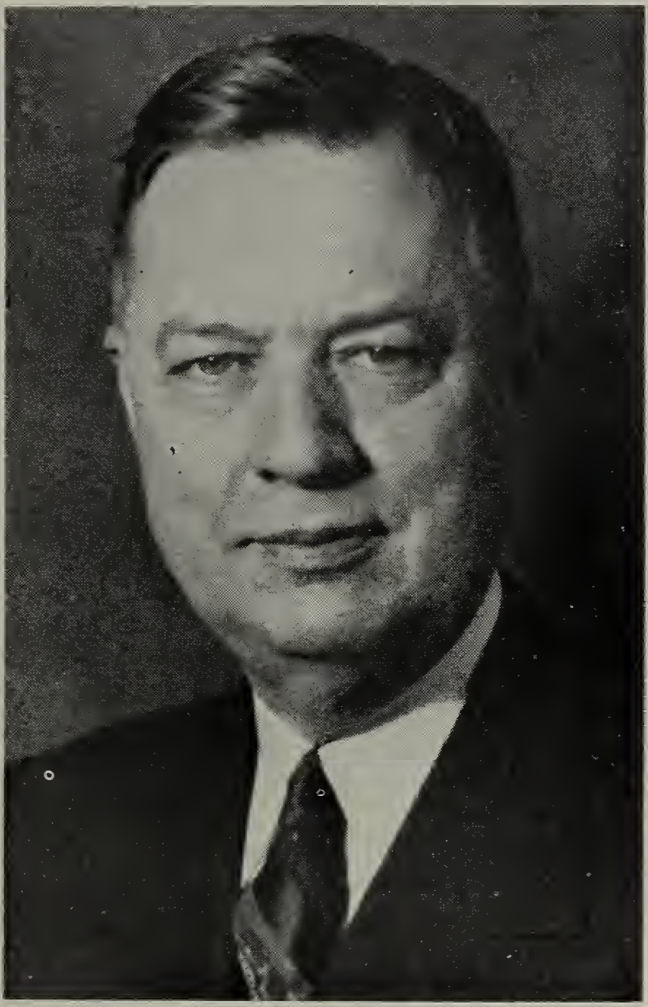
Northeast Mississippi recently welcomed Doctor Seale Harris of Birmingham for a round of visiting. He came first to Amory to visit Dr. G. S. Bryan, the Sage of Monticello in state medicine, thence to Booneville, and then to Holly Springs where he stopped with the Philpots and spoke to the local medical society. The next day he addressed the student body at Blue Mountain College and on the following night he was guest speaker for a joint meeting of the Holly Springs and Ripley Rotary clubs. We look forward to his presence at the state meeting.

He is now in the process of writing another book—on longevity, the long happy and useful life.

Dr. Seale Harris is the embodiment of the best in Southern medicine. No doctor in the South is more beloved than he and no one symbolizes the spirit and ideals of the profession in quite the inimitable of Dr. Harris.

News and Comment

A.M.A. PRESIDENT



A.M.A. President Elmer Henderson will be a guest of the state meeting this year. He is or has been president of about all the important medical organizations known. His untiring service has been in educating the public on the evils of socialized medicine. We are delighted to have him with us.

PRESIDENT

Dr. B. S. Guyton, who has proved himself a constructive thinker as president of the State Medical Association, will come with constructive suggestions at the coming annual meeting. We can follow him and fear no evil. He is outstanding in his specialty, well rounded in every way. Dr. Billy did general practice before he entered the specialty of eye, ear, nose and throat. He possesses medical integrity, mental honesty, broad education, and makes his decisions as a rule after full investigation. In putting our four-year medical school into workable form his help is going to be most valuable. Let us show our appreciation of Dr. Billy Guyton by giving him a big attendance.

PRESIDENT-ELECT

Dr. James Grant Thompson of Jackson is the incoming president of the Mississippi State Medical Association. He will prove an active and an able leader.

Mississippi State Medical Association

SECTION ON OBSTETRICS AND GYNECOLOGY

J. A. K. Birchett, Jr., Chairman, Vicksburg

Tuesday, May 15, 1951—Session 1:30 p.m. to 6:00 p.m.
Hurricane Room, Buena Vista Hotel

Ruptured Uterus ....Theo. F. Middleton, Meridian
Discussion to be Opened by John C. Week and Jas. R. Migell. III, Mobile, Ala.

Enteriobius Vermicularis in the Human Uterus ....J. P. Fatherree, Laurel
Discussion to be Opened by R. A. Street, Jr., and Rodney C. Jung

Ectopic Pregnancy ..Conrad G. Collins, New Orleans

Pitfalls in Gynecology ..Glen T. Pearson, Hattiesburg
Discussion to be Opened by C. A. Jackson and Carl E. Lewis

Dysmenorrhea ....I. C. Knox, Jr., Vicksburg
Discussion to be Opened by J. F. Lewis and W. B. Weiner

SECTION EYE, EAR, NOSE AND THROAT

A. V. Hays, Chairman, Gulfport

Tuesday, May 15, 1951—Session 1:30 to 6:00 p.m.
Fiesta Room, Buena Vista Hotel

The Pupil ....Alfred Cowan, Philadelphia, Pa.

Cortisone in Eye Diseases ....J. B. Rogers, Oxford
Discussion to be Opened by E. St. Germain and Donald S. Hall

The Differential Diagnosis of Deafness in Young Children ....Helmer R. Myklebust, Evanston, Ill.

Diseases and Treatment of the Sphenoid Sinuses ....D. C. Montgomery, Jr., Greenville
Discussion by R. H. McArthur, Jr.

EVENING SESSION—SEVEN-THIRTY O'CLOCK

B. B. O'Mara, Presiding

Hurricane Room—Buena Vista Hotel
Tuesday, May 15, 1951

Invocation ....Rev. T. A. Carruth, Biloxi

Annual Oration on the Life of Hugh L. Sutherland ....E. R. Nobles, Rosedale

In Memoriam ....By the Secretary

Presentation of the President's Pin

Medical Care Coverage in Mississippi—President's Address ....B. S. Guyton, Oxford

1951—Medicine's First Year of Grace ....E. L. Henderson, Louisville, Ky.
President of the A. M. A.

SECTION ON MEDICINE

Guy T. Vise, Meridian, Chairman

Wednesday, May 16, 1951—Convention Hall
Buena Vista Hotel
Session 9:00 a.m. to 12:30 p.m.

Sickle Cell Anemia: An Hematologic Challenge ....Geo. W. Rogers, Gulfport
Discussion to be Opened by J. B. Howell and E. L. Bolton

Differential Roentgen Diagnosis in Intestinal Lesions ....L. T. Sante, St. Louis

Diagnosis and Treatment of Irradiation Injury ....Wm. H. Riser, Jr., Birmingham

Public Relations ..James Grant Thompson, Jackson
Discussion to be Opened by Lamar Arrington and F. M. Acree

Significance of Recent Studies with ACTH and Cortisone ....Cyril M. MacBryde, St. Louis

Auricular Flutter ....J. P. Tatum, Meridian
Discussion to be Opened by B. C. Edwards and T. E. Wilson, Jr.

SECTION ON HYGIENE AND PUBLIC HEALTH

R. L. Wyatt, Chairman, Holly Springs

Wednesday, May 16, 1951—Session 9:00 a.m. to 12:30 p.m.

Sun Room, Buena Vista Hotel

A Proposed State Heart Disease Control Program ....T. D. Labecki, Jackson
Discussion to be Opened by Gaines Cook and Joseph P. Melvin, Jr.

Diagnosis and Treatment of Amebiasis ....Wm. W. Frye, New Orleans

Medical and Health Services in Civilian Defense ....Panel Discussion

Moderator ....A. L. Gray

a. The Proposed State Organization ....A. L. Gray, Jackson

b. The Private Practitioner in Civilian Defense ....F. M. Davis, Corinth

b. Local Organization of Medical Facilities in in Civilian Defense ....E. E. Benoit, Miss.

Motion Picture Film ......M. D., The U. S. Doctor

SECTION ON PEDIATRICS

L. L. McDougal, Jr., Tupelo, Chairman

Wednesday, May 16, 1951—Session 2:00 p.m. to 6:00 p.m.

Hurricane Room, Buena Vista Hotel

Practical Approach to Congenital Heart Disease ....J. G. Hughes, Memphis

Blood Dyscrasias ......Randolph Batson, Nashville

Histo-Plasmosis ....Eva Linn Meloan, Jackson

Asphyxia of the Newborn ..J. N. Robinson, Columbus

Advances in Diagnostic Procedures ....E. W. Eberling, Starkville

Treatment of Meningitis ....L. G. Horn, Vicksburg

Pediatric Care of the Surgical Patient ....J. M. Hendrix, Jackson

SECTION ON SURGERY

James R. Simms, Jr., Chairman, Oxford

Thursday, May 17, 1951—Session 9:00 a.m. to 12:30 p.m.

Hurricane Room, Buena Vista Hotel

Retropubic Prostatectomy: Report of Cases .. ..R. D. Kirk and L. C. Feemster, Tupelo
Discussion to be Opened by Paul Gamble and Gerald Wessler

Resusitation in Respiratory and Circulatory Arrest ....Arthur C. Guyton, Oxford
Discussion to be Opened by L. R. Reid and C. L. Neill

The Diagnosis and Management of a Patient with a Lump in the Neck ....R. R. Braund, W. D. Dunavant, and Miss Peggy Hickey, Memphis

Limitations and Errors in Histopathologic Diagnoses ....William V. Hare, University
Discussion to be Opened by Richard Fenstermacker and Theo. Rayburn

The Surgical Treatment of Hypertension ....Harwell Wilson, Memphis

Early Ambulation .Frank O. Schmidt, Ocean Springs
Discussion to be Opened by B. F. Floyd and John Dyer

Status Post Hysterectomy ....Robert B. McLean, Jackson
Discussion to be Opened by A. C. Hewes and J. Walton Lipscomb

HOUSE OF DELEGATES

Hurricane Room—Buena Vista Hotel
Thursday, May 17, 1951, 1:30 p.m. until completed

ATTEND N. O. ASSEMBLY

The following Mississippi physicians attended the annual meeting of the New Orleans Graduate Medical Assembly March 5-8, 1951, in New Orleans:

Dr. J. K. Avent, Grenada; Dr. W. S. Berry, Dr. Nelson O. Tyrone, Prentiss; Dr. Emile A. Bertucci, Jr., Poplarville; Dr. F. L. Butler, McComb; Dr. Richard E. Caldwell, Baldwyn; Dr. Robert A. Carsley, Canton; Dr. C. E. Catchings, Woodville; Dr. Stephen A. Chavez, Dr. J. R. Foster, Dr. Presley E. Weirlein, Biloxi; Dr. James A. Chustz, Dr. Boyd C. Edwards, Dr. J. H. Johnston, Jr., Dr. R. C. O'Farrall, Dr. G. W. F. Rembert, Dr. James L. Royals, Dr. F. M. B. Slater, Dr. A. Gayden Ward, Dr. T. E. Wilson, Jackson; Dr. Richard H. Clark, Dr. J. P. Culpepper, Jr., Dr. P. E. Smith, Hattiesburg; Dr. G. S. Daly, Dr. C. C. Thompson, Jr., Columbia; Dr. J. F. Eckford, Starkville; Dr. R. B. Flowers, Dr. L. L. McCharen, West Point.

Dr. Gerald P. Gable, Belzoni; Dr. E. K. Guinn, Okolona; Dr. R. G. Hand, Philadelphia; Dr. Martin B. Harthcock, Clarksdale; Dr. W. B. Hickman, Louisville; Dr. W. W. Hickman, Noxapater; Dr. Robert L. Holley, Jr., Oxford; Dr. N. C. House, Batesville; Dr. J. D. Hutchins, Dr. F. F. Smith, Crystal Springs; Dr. J. J. Kazar, Tchula; Dr. J. C. Longest, State College; Dr. Thomas F. McDonnell, Dr. R. B. Zeller, Hazlehurst; Dr. S. H. McDonnieal, Jr., Lucedale; Dr. A. J. Messina, Vicksburg; Dr. Dan H. Moore, Dr. Paul H. Parker, Meridian; Dr. L. G. Pascal, Magnolia; Dr. Charles Pruitt, Jr., Magee; Dr. D. C. Rudern, Picayune; Dr. Frank O. Schmidt, Ocean Springs; Dr. A. H. Smith, Sumner; Dr. D. H. Thornhill, Crosby; Dr. V. D. Watson, Brandon; Dr. Gerald Wessler, Gulfport.

PROTESTS ARTICLE

The following telegram to the *Woman's Home Companion* was sent jointly by the American Hospital Association and the American Medical Association to protest "Trouble in Our Hospitals"—an article by Albert Deutsch in the current issue of the magazine.

William A. H. Birnie, Editor
Woman's Home Companion

Thomas H. Beck, Chairman of the Board
Crowell-Collier Publishing Company
640 Fifth Avenue
New York 19, New York

APHF3 DL Chicago Illinois April 23 1951

We wish to protest strongly the tone of "Trouble in Our Hospitals" by Albert Deutsch in the current issue of Woman's Home Companion.

While it is true there are some areas of disagreement between physicians and hospitals—just as there are in all human relationships—the author of this article has magnified these differences of opinion out of all proportion to the truth. His statement that "The A.M.A. and the hospitals, which should be marching hand in hand toward better services for the sick, are locked in combat," is nothing short of sensationalism.

The doctors and hospitals have always cooperated in efforts to deliver the best possible medical care and will continue to do so. Any differences are being ironed out peaceably around the conference table.

George Bugbee, Secretary
American Hospital Association
George F. Lull, Secretary and General
Manager, American Medical Ass'n.

DOCTORS' NIGHT AT CENTRAL MEDICAL

(Upper) Dr. and Mrs. W. F. Hand and Dr. and Mrs. R. C. O'Ferrall in one corner of the Lounge at the Jackson Country Club on "Doctors' Night," when the wives were hostesses and entertained their husbands.

(Lower) Dr. Felix J. Underwood and Dr. H. F. Garrison, Sr., in the foreground and Drs. H. C. Sheffield and Dr. George Owen, separately discussing the MacArthur affair.

(Inset) Our genial president-elect, to be installed as president in May, at Biloxi, discoursing on a timely medical subject with the aid of his new moustache.

The doctors' wives of the Central Medical Society District have annually entertained their husbands in April of each year with a party, known as "Doctors' Night." Members of the auxiliary are hostesses honoring their husbands at this popular annual affair and more than 100 couples were entertained at the

Jackson Country Club Monday evening, April 16, with a sumptuous buffet dinner served in the main club dining room.

After the dinner the tables were cleared and there was dancing, bridge and canasta, fellowship and discussion of world affairs or medical topics.

SUPPORTS HEART DISEASE CONTROL PROGRAM

Dr. W. H. Anderson, Editor
The Mississippi Doctor

Dear Doctor Anderson:

Your editorial in the current issue of **The Mississippi Doctor** concerning the launching of the Heart Disease Control Program is most inspiring.

Because of the fact that this program is a new one and has not, to the best of my knowledge, received the publicity it well deserves, I will greatly appreciate it if you will publish this letter in **The Mississippi Doctor** so that more practitioners may learn the distinct advantages of this service.

This program is **definitely not** another step toward socialized medicine. It is financed by the Mississippi State Board of Health and directed by the Heart Committee of the Mississippi State Medical Association composed of some of the outstanding cardiologists in our state.

This service is provided for rural areas where medical consultants in cardio-vascular diseases are not readily available.

During the past month we have had occasion in this community to benefit by the visits of the cardiac consultant, Doctor Thaddeus D. Labecki. Consultations are held in the physician's office, in the hospital, or in the patient's home. Dr. Labecki has his own portable electrocardiographic equipment, and the fluoroscopic facilities are provided by the physicians and/or local hospital. The consultations are conducted by Dr. Labecki with great tact and restraint, without the least embarrassment to the practitioner or family physician. Only general or superficial suggestions or advice are made directly to the patient. Detailed findings, diagnosis, advice and suggested treatment are provided for the physician in private, in writing if desired. Thereafter the physician is at liberty to accept or reject the results of the consultations in the continued handling of the patient. Dr. Labecki makes no record of the consultations, not even the patient's name, and there is **no follow-up except** at the request of the physician.

The professional value of this type of service has been great. The practitioner benefits by association with a highly skilled cardio-vascular specialist, has an opportunity to present his patient personally to the consultant, to observe the specialist's approach to the patient, examination, electro-cardiography, fluoroscopic examination, and to profit by these findings in the consultant's therapeutic suggestions. Dr. Labecki is thoroughly familiar with the best established and accepted procedures, though he is most conservative in his recommendations, keeping them within the patients' circumstances. There is no charge to either the patient or the physician for the consultant's services or electrocardiograms. However, the physician is privileged to charge the patient his own usual fees.

We have found it is a good arrangement for the chief of the hospital staff to make the appointment directly with Dr. Labecki to hold a "heart clinic" on a specified date and then work out a schedule of hourly appointments for complete cardio-logical examinations, or half-hour sessions for follow-up cases.

Appointments are made only by the family physician who has previously examined the patient, and not at the incidence of the patient himself.

My sincere appreciation and that of my colleagues of Belzoni and Humphreys County is extended to the chairman and members of the Heart Committee of the Mississippi State Medical Association for their vision in planning the Heart Disease Control Program. This service merits our whole-hearted recommendation to all interested physicians.

Very sincerely yours,

Toxey E. Hall, M.D., President
Delta Medical Society

ANNOUNCEMENTS

Frank K. Tatum, M.D., announces the removal of his office to the Professional Building, 428 Main Street, Tupelo, Mississippi.

The Vicksburg Clinic and the Lutheran Hospital announce the association of Doctor H. Thurston Whitaker in the Department of General Surgery.

STATE BOARD OF HEALTH

Felix J. Underwood, M.D., Executive Secretary

TRENDS IN VENEREAL DISEASE CONTROL

A. L. Gray, M. D., Director
Division of Preventable Disease Control

The past fifteen years have witnessed dramatic changes in the venereal diseases picture. It is impressive to view the accomplishments which have taken place since 1936 when the people for the first time heard about syphilis and gonorrhea publicly through the efforts of Surgeon General Thomas Parran and his as-associates. "Why Don't We Stamp Out Syphilis" was the title of an arresting article appearing in the widely-circulated **Reader's Digest** just after a broadcasting station refused to allow the word "syphilis" to be used in a radio talk. Other lay magazines followed with articles which presented the problem forcefully and the public became stirred at the disgracefully high incidence of venereal disease which existed and which posed a serious national health problem. The problem became a focal point for renewed public health action as Congress appropriated funds to the U. S. Public Health Service which made it possible to initiate programs of venereal disease control at the national, state, and county levels.

A vigorous and effective educational program was launched, although there remained a considerable handicap in that there were really no effective therapeutic approaches which lent themselves to the control of these diseases on a mass basis. Much was needed in the form of diagnostic, epidemiologic, and even educational approaches to the eventual solution of the problem. The continuing research and work that followed bore fruit which well justified the vast amounts of federal, state and local funds which had to be expended. Improved diagnostic technics were developed, case-finding methods became more effective, efforts at public education began to "take" where it was most needed, and finally the discovery of a simpler and more effective therapy opened the way to progress on a scale little dreamed of in the early, difficult days of the venereal disease control program.

For the most part this gigantic effort was financed in the beginning through federal funds. Certainly, without this financial assistance there would have been no uniformity of program and it is difficult to imagine how many years would yet have to pass before the present state of progress had been reached had each state endeavored to undertake the job alone. It is unfortunate, however, that basic legislation on a national level through which funds were provided to states for venereal disease control did not and perhaps could not stipulate the period of time for which federal aid might be expected. Neither was the rate of prospective financial aid to states related to the rate of decline of the problem. It would seem wise that federal support of control programs in regard to problems of this type might be planned either on a time basis or on the basis of the size of the problem.

In Mississippi in 1945, the rate of occurrence of primary and secondary syphilis for 5,000 population was 19. By 1947 this rate had declined to 10.1; in 1949 it was 4, and in 1950 it was 2.1. This represents a most satisfactory trend and compares favorably to trends in each of the other states and the nation as a whole. The whole trend today would seem to indicate that the problem of syphilis is rapidly shrinking from one of serious national concern to one of state and mainly local significance. In view of this, it will soon become evident that the large amounts originally spent on control can no longer be justified, and that the total cost of continuing the decline of incidence should follow the trend of incidence downward.

Syphilis, as a national problem, now has an incidence of approximately 3.2 early cases for each 5,000 population, but in some states this rate has dropped to one or less. Other states are rapidly approaching or passing this rate of one per 5,000 population. This may be considered a new milestone of achievement, and as the rate reaches or passes this milestone it is felt that it changes the problem from one of national concern to one of state and local responsibility. It should be recognized that the national effort has produced and made available acceptable tools for diagnosis and treatment which if properly applied will likely force this trend still further downward until the problem has reached a level of irreducibility.

Since there is no immunizing agent against syphilis, foci and pockets of infection remaining will have to be cleaned out and the permanent maintenance control program must be promoted and financed at state and local levels.

Maintenance control by health departments must include a 2-way flow of information telling the state officers and their venereal disease control directors where and in what amount the infection is concentrated in their states. It must also provide for a flow of educational information to local health departments which will keep professional groups informed and quite active in assisting in the control and the public alerted to the dangers of untreated syphilis at all times. The governor and members of state legislatures of the various states must be acquainted and impressed with the facts and requirements for maintenance control. State and local governmental agencies should be acquainted with the cost of residual and improperly treated syphilis. As this problem reaches the maintenance control level of roughly one new case per 5,000 population, we as venereal disease control workers must no longer look to Federal sources for the major share of control funds; instead we must secure required funds from state and local governmental agencies on the basis of accurate knowledge as to the remaining problem and the possibility of this problem again breaking out of the bounds of control. In other words, we must deal honestly and fairly with Congress and ask only for funds that are needed to continue the war on these diseases to the extent that they are national problems and where they have not already been reduced to a manageable point by local and state agencies.

If national forces are reintroduced in a given area of the nation which increase the problems of syphilis and gonorrhea in a given region or the nation as a whole, the financial burden for control should again be assumed in a large measure by the Federal government. It would be most unusual if any disease is brought under control simultaneously in all states. This means that there is a necessity for Federal aid in the future for venereal disease control to have flexibility which would permit discontinuing Federal aid to states in proportion to the required extent of the problem in each state. Federal financial assistance should not be discontinued for a given state when it has reached the maintenance level of one new case per 5,000 until after the state legislature of that state has had an opportunity to consider the matter of financing the maintenance control program and with full knowledge that Federal support is to be discontinued. Certainly the state legislators must be made acquainted with the fact that the pattern of human behavior responsible for the spread of venereal diseases has not changed nor will it likely change sufficiently to hold the incidence of the disease down to a maintenance level. They should also know that a watchtower of epidemiologic intelligence must be maintained over the entire state supported by diagnostic and treatment services available to all those suspected of or known to have infectious syphilis. In addition, they must know that this control patrol activity must be maintained and that it will cost money which for the most part must be provided by state and local agencies.

As the various states reach the maintenance level of roughly one new case per 5,000 population per year, it presents a new challenge to those in the state boards of health and local health departments responsible for venereal disease control. This challenge tells us that if we do not use every possible effort in getting state and local control, the national, state, and local efforts of the past fifteen years may be for the most part overshadowed and discounted by a resurgence of the problem. This challenge also means for the future we, as venereal disease control officers, and other workers must be even more concerned than in the past, for with the disease syphilis we can never afford to become complacent. The controllability of syphilis has been thoroughly demonstrated. It remains for us to demonstrate our ability to continue that control primarily through the use of state and local resources.

FOUR YOUNG INTERNS TO ENTER PRACTICE

Mississippi men are now interning in Mississippi. Four young physicians will begin internship at Mercy Hospital in Vicksburg in July, 1951. All four are state medical education loan recipients. They are: William L. Carr, Jr., of Laurel; Harry C. Frye, Jr., of Jackson; Lamar Puryear, Jr., of Raymond; Luther D. Turner, of Richton.

Mr. Carr, son of Mr. and Mrs. William L. Carr., Sr., of Laurel, after completing two years of medical studies at the University of Mississippi School of Medicine, enrolled at Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, North Carolina, where he will receive the Doctor of Medicine degree this spring. Mr. Carr is a married veteran, husband of Mrs. Gertrude Kelly Carr.

Mr. Frye and Mr. Puryear are to receive their Doctor of Medicine degrees this June at Tulane University School of Medicine. Mr. Frye is a married veteran, husband of Mrs. Helen McGehee Frye. The Fryes have two children. Mr. Puryear, native of Raymond, is son of Mr. and Mrs. Lamar Puryear, Sr., of that community. He is a married veteran, with one child. His wife is Mrs. Julia Goodman Puryear.

Mr. Turner, of Richton, is son of Rev. and Mrs. Luther K. Turner, also of Richton. After completing premedical studies and two years of professional training at the University of Mississippi School of Medicine, Mr. Turner transferred to LSU School of Medicine, where he will receive his Doctor of Medicine degree this June. He is a married veteran, husband of Mrs. Hazel Moseley Turner.

INTERPRETING MEDICAL LITERATURE

PEDIATRICS

Hyaluronidase in Administration of Fluids. Alexander A. Jaworski and John E. Farley, Jr., Providence, R. I., Am. J. Dis. Child. 79:59-64, Jan. 1950.

"Hyaluronidase, a relatively new agent for facilitating fluid administration by hypodermoclysis was investigated. Numerous toxicity studies were performed to insure the relative safety of alidase (G. D. Searle and Co., commercial hyaluronidase product).

"In a study of 10 normal children, 250 viscosity units of hyaluronidase were injected subcutaneously into the left thigh daily for seven days. No evidence of toxicity was found by studies of blood levels for urine, creatinine and CO_2 combining power, cephalin flocculation, bleeding time, coagulation time, heparin-protamine titration, clot retraction, blood count, urinalysis, electrocardiogram, and local reactions. No intradermal skin test sensitivity was noted in 150 individuals.

Simultaneous bilateral hypodermoclyses were administered to 100 acutely ill infants and children weighing 8 to 30 pounds. One thigh received glucose-saline solution with the addition of 25 viscosity units of hyaluronidase injected into the tubing before starting the clysis, while the other thigh received plain glucose-saline solution. For a volume of 150 to 200 ml. of fluid, hyaluronidase decreased the average time required for administration from 175 minutes to 52 minutes, a 3.3 fold increase in rate. The sites receiving fluid plus hyaluronidase exhibited only moderate swelling of a diffuse and soft nature."

Relation Between Cycle (Acetonemic) Vomiting and Migraine, B. Vahlquist, Stockholm, Sweden. Ann. Paediat. 173:272-80, Oct. 1949.

"In 24 cases of cyclic (acetonemic) vomiting in children, a follow-up study showed that 4 of these children in later life developed attacks of migraine. But as the average age at the time of the follow-up study was 14 years, it is possible that migraine may develop in later years in others in this series. Of 22 mothers of the children with cyclic vomiting, 7 gave a history of typical migraine. In a small group of patients there was a direct relationship between the cyclic vomiting and migraine, in that the attacks of vomiting alternated with typical attack of migraine, or that the attacks of vomiting may have been true migraine attacks because of the occurrence of a headache of the migraine type before the vomiting became severe. In a larger group in this series of cases, however, there was no association of the attacks of cyclic vomiting with symptoms of migraine, and no family history of migraine. In these cases signs of an unstable nervous system were often present, and the possibility that migraine may develop later cannot be excluded."

COMMENT: In abstracting the first article relative to hyaluronidase, usually referred to as alidase, has been used by us a great deal in the administration of clysis to infants and children. It is certainly an added advantage in the administration of fluids and also that of medicine in a subcutaneous way. The second article in regard to cyclic vomiting and migraine is certainly a very interesting thought. In our practice we have frequently given dramamine in these cases and also emetrol, which seem to give a great deal of relief and help to offset the more violent types of this condition.

Woman's Auxiliary

OFFICERS

President	Mrs. W. H. Anderson	Booneville
President-Elect	Mrs. George Owen	Jackson
First Vice-President	Mrs. Augustus Street	Vicksburg
Second Vice-President	Mrs. T. A. Baines	Jackson
Third Vice-President	Mrs. John B. Howell, Jr.	Canton
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Revisions	Mrs. H. C. Ricks	Jackson
Nominations	Mrs. Stanley A. Hill	Corinth

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First District	Mrs. George Archer	Greenville
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Eighth District	Mrs. W. K. Stowers	Natchez
Ninth District	Mrs. C. H. McCall	Gulfport

AMA BULLETIN

Last Call for reservations for the Twenty-eighth Annual Convention of the Woman's Auxiliary to the American Medical Association, which will be held at Haddon Hall, Atlantic City, New Jersey, June 11-14.

Twenty-eighth Annual Session
PROGRAM
Woman's Auxiliary to the Mississippi State Medical Association

May 15 and 16, 1951
Hotel Buena Vista
Biloxi, Mississippi

Tuesday, May 15

9:00 a.m.—Registration, Lobby of Buena Vista Hotel

10:00 a.m.—Pre-Convention Board Meeting
Invocation—Mrs. Stanley A. Hill, Corinth
Pledge of Loyalty
Announcements—Mrs. E. A. Trudeau, Convention Chairman
Business

12:15 p.m.—Auxiliary Luncheon, White House Hotel
Invocation—Mrs. S. B. McIlwain, Pascagoula
Address—Mrs. Harold F. Wahlquist, President Auxiliary to American Medical Association

General Session

Invocation—Dr. Joe T. Odle, Gulfport
Welcome—Mrs. P. E. Werlein, Biloxi
Response—Mrs. Joe Rogers, Oxford

2:00 p.m.—Opening of Session—Mrs. W. H. Anderson, presiding
Address—Mrs. Neil Woodward, Vice-President, Auxiliary to Southern Medical Association
Credentials and Registration—Mrs. E. Bolton
Announcements—Mrs. E. A. Trudeau, Convention Chairman
Report of S.M.A.—Mrs. Harvey F. Garrison, Sr., Jackson
Adjournment

Wednesday, May 16

8:00 a.m.—Past-Presidents' Breakfast, Mrs. Augustus Street, Vicksburg, hostess

9:00 a.m.—Registration

9:30 a.m.—General Session, Fiesta Room, Buena Vista Hotel
Presiding—Mrs. W. H. Anderson, Booneville
Invocation—Mrs. J. K. Avent, Grenada
Roll Call—
Memorial Service—Mrs. H. L. Cockerham, Gunnison
Greetings from Mississippi State Medical Association—Drs. Guyton and Thompson
Reading of Minutes
Announcements—Mrs. E. A. Trudeau, convention chairman
Reports of Achievements — Officers, Committees, Councilors, Auxiliary

Presidents
Business
Report of Nominations Committee—Mrs. Stanley A. Hill, Corinth, chairman
Election of Delegates to A.M.A.
Election of Officers
Courtesy Resolutions — Mrs. George Riley, Jackson
Adjournment
12:15 p.m.—Doctors' Day Luncheon, Buena Vista Hotel
Presiding, Mrs. W. H. Anderson, president
Invocation—Dr. T. M. Dye, Clarksdale
Address—Mr. Hodding Carter, Greenville
2:00 p.m.—Installation of 1951-1952 Officers
Presentation of Gavel and President's Pin
Response of Incoming President—Mrs. George W. Owen, Jackson
3:00 p.m.—Post-Convention Board Meeting, Mrs. George Owen, presiding, School of Instruction for Board Members and County Presidents
Motion picture, **"M. D. U.S. A.,"** Fiesta Room, Buena Vista Hotel

AUXILIARIES ELECT

Tri-County

At the March meeting of the Tri-County Auxiliary in Wesson, the following new officers were elected for the coming year:

Mrs. Charles F. Dorsey, Brookhaven, president; Mrs. W. B. Harvey, Tylertown, president-elect; Mrs. E. P. Robbins, Brookhaven, secretary-treasurer.

Central

The following new officers will assume office in the Central Medical Auxiliary:

Mrs. Temple Ainsworth, president; Mrs. J. P. Melvin, vice-president; Mrs. Charles L. Neill, secretary; Mrs. Leonard S. Posey, Jr., historian; Mrs. W. R. Bethea, parliamentarian; Mrs. William Austin, nurse recruitment.

South Mississippi Auxiliary

Mrs. Harry Fridge, Hattiesburg, president; Mrs. Chester Farmer, Laurel, president-elect; Mrs. Richard Clark, Hattiesburg, vice-president; Mrs. Van Temple, Hattiesburg, secretary; Mrs. Nollie Felts, Hattiesburg, treasurer.

Northeast Mississippi

Mrs. W. L. Orr, Fulton, president; Mrs. S. B. Platt, Jr., Columbus, president-elect; Mrs. H. G. Waldrop, Booneville, Mrs. L. B. Morris, Macon, Mrs. J. D. Tatum, Tupelo, and Mrs. Frank Davis, Corinth, vice-presidents; Mrs. M. Q. Ewing, secretary-treasurer; and Mrs. Thomas Gore, Houston, parliamentarian.

CALLING ALL COUNCILORS, OFFICERS, AND LOCAL PRESIDENTS FOR SCHOOL OF INSTRUCTION

This year there will be inaugurated a school of instruction immediately following the last session Wednesday afternoon, May 16, to indoctrinate all incoming state and local officers in their duties. This plan has been adopted in other states with great success, and Mississippi Auxiliary members will now have the opportunity of entering a year's work clothed with knowledge and challenge.

The school will be conducted by a state past-president, Mrs. Augustus Street of Vicksburg, and will be held at the Buena Vista Hotel. Make the attendance one hundred per cent!

DEATHS

DR. T. B. HOLLOMAN

Dr. Thomas Bascom Holloman, beloved physician of Itta Bena, died at his home there March 28.

Dr. Holloman was born December 13, 1874 at Canton, son of the late Rev. T. B. Holloman and Mary Holliday Holloman.

In 1900 he married Mary Hamilton, daughter of the late Mr. and Mrs. John B. Hamilton of Abingdon, Va.

He was an active member of the Itta Bena Methodist Church, member of the Board of Stewards and influential in religious and civic affairs of the community. He was a charter member of the Itta Bena Masonic Lodge, member of Kappa Sigma fraternity and founded in the Kappa Sigma Chapter at Millsaps College.

Besides his wife, he is survived by the following children: Mrs. W. W. Boone, Mrs. H. E. Hubbard, both of Memphis; T. B. Holloman, III, C. C. Holloman, both of Batesville; Rev. Garland H. Holloman, Greenville; William Fielding Holloman, Columbia, S. C.; 12 grandchildren, also the following sisters and brothers: Mrs. Stella H. Robertson, Itta Bena; Mrs. F. H. Scott. Jackson; J. H. Holloman, Ruleville; L. C. Holloman, Memphis.

DR. ROBERT J. ENOCHS

Dr. Robert John Enochs, for many years a resident of Philadelphia, died in a San Francisco, Calif., hospital March 12.

Dr. Enochs was a member of one of Mississippi's most prominent families and was the son of the late Captain J. B. Enochs and Mrs. Enochs of Crystal Springs. He spent his early life in Copiah County and after graduating from Tulane University Medical School later went west where he practiced his profession in Colorado for some time.

Entering the US Indian Service, Dr. Enochs came back to his native state, being transferred from Utah to Philadelphia where for six years he served as Superintendent of Choctaw Agency.

He is survived by his wife, Mrs. Maribelle Shelton Enochs; two sons, Dr. James Byron Enochs, Dean of Men, University of San Francisco and Robert J. Enochs, Jr., practicing attorney of Denver; three sisters, Mrs. J. M. Black of Jackson, Mrs. Wiley Grantham of Terry and Mrs. Hugh Stiles of Starkville; and two brothers, Frank and Walter Enochs of Crystal Springs.

Browne-McHardy Clinic

- Diagnostic and Therapeutic Facilities
- Internal Medicine and Gastroenterology
- Surgery
- Gynecology and Obstetrics
- Radiology—X-ray and Radium therapy
- Laboratory and Research Departments
- Hotel facilities available

Browne-McHardy Clinic

3636 ST. CHARLES AVENUE

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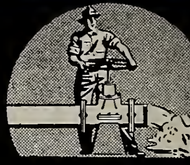

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